THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WATER

Water Sector Development Programme
2006 – 2025

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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
ASDB	Agricultural Sector Development Programme
BWB	Basin Water Board
BWO	Basin Water Office
CAPSTART	Capacity Building Starter Activities
CB&T	Capacity Building and Training
CBO	Community-based Organisation
CMSSS	Community Management Support Services Section
COWSO	Community-Owned Water Supply Organisation
CWC	Catchment Water Committee
DAWASA	Dar es Salaam Water and Sewerage Authority
DBMS	Database Management System
DC	District Council
DGCG	Donor Government Consultative Group
DHS	Demographic and Health Survey
DP	Development Partner
DPG	Development PartnersôGroup
BWB	Basin Water Board
DWR	Division of Water Resources
DWSS	District Water Supply and Sanitation
DWSSP	Dar es Salaam Water Supply and Sanitation Project
DWST	District Water and Sanitation Team
EAC	East African Community
EA	Executive Agencies
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
ESA	External Support Agency
EU	European Union
EWURA	Energy and Water Utilities Regulatory Authority
FSP	Facilitation Service Provider
GA	General Administration
GBS	General Budget Support
GIS	Geographic Information System
GNI	Gross National Index
GoT	Government of Tanzania
HBS	Household Budget Survey
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IEC	Information, Education and Communication
IRBMP	Integrated Reviver Basin Management Plan
IWRM	Integrated Water Resource Management
JAS	Joint Assistance Strategy
KPI	Key Performance Indicator
LFA	Logical Framework Analysis
LGA	Local Government Authority
LGRP	Local Government Reform Programme
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MIS	Management Information System
MKUKUTA	Mkakati wa Kukuza Uchumi na Kuondoa Umaskini Tanzania
MoE	Ministry of the Environment
MoF	Ministry of Finance
MoHSW	Ministry of Health and Social Welfare
MoU	Memorandum of Understanding
MoW	Ministry of Water

NAWAPO	National Water Policy, 2002
NBI	Nile Basin Initiative
NEMC	National Environment Management Council
NGOs	Non-Governmental Organisation
NPRS	National Poverty Reduction Strategy
NPV	Net Present Value
NSGRP	National Strategy for Growth and Reduction of Poverty
NWB	National Water Board
NWSDS	National Water Sector Development Strategy
O&M	Operation and Maintenance
OPSSS	Operational Planning Support Services Section
PER/MTEF	Performance Expenditure Review/Medium-Term Expenditure Framework
PERWG	Public Expenditure Review Working Group
PHDR	Poverty and Human Development Reports
PMF	Performance Monitoring Framework
PMMP	Poverty Monitoring Master Plan
PMO-RALG	Prime Ministerôs Office ï Regional Administration and Local Government
PMS	Poverty Monitoring System
PRSP	Poverty Reduction Strategy Paper
PRSTC	Poverty Reduction Strategy Technical Committee
PS	Permanent Secretary
RBMSIIP	River Basin Management and Smallholder Irrigation Improvement Project
RDP	Rural Development Policy
RDPS	Rural Development Policy and Strategy
RS	Regional Secretariat
RWSD	Rural Water Supply Division
RWSS	Rural Water Supply and Sanitation
RWSSP	National Rural Water Supply and Sanitation Programme
RWST	Regional Water and Sanitation Teams
SADC	Southern African Development Community
SWAP	Sector Wide Approach to Planning
TA	Technical Assistance
TAC	Technical Advisory Committee
TAS	Tanzanian Assistance Strategy
TSP	Technical Service Provider
TSSS	Technical Support Services Section
TWG	Technical Working Group
TZS	Tanzanian Shillings
UfW	Unaccounted-for-Water
UN	United Nations
USD	United States Dollar
UWSA	Urban Water and Sanitation Authority
UWSS	Urban Water Supply and Sewerage
UWSSP	Urban Water Supply and Sewerage Programme
WATSANs	Water and Sanitation Committees
WRBWO	Wami-Ruvu Basin Water Office
WRM	Water Resources Management
WRMP	Water Resources Management Programme
WSS	Water Supply and Sanitation
WSSA	Water Supply and Sanitation Authority
WSDP	Water Sector Development Programme
WTP	Water Treatment Plant
WUA	Water User Association
WUF	Water User Fee
WUG	Water User Group

DEFINITIONS

Access: Is an outcome indicator influenced by the water sector and other water related sectors such as health, education, agriculture, lands, natural resources. Examples would be percentage households or population served with improved water supply or sanitation.

Aquifer: An underground geological formation, or group of formations, which contain water and are sources of groundwater for wells and springs, and which are not necessarily contained within river basin boundaries.

Authority: An autonomous organisation established by or under an Act of Parliament to carry out specific functions within defined areas, accountable to a Minister through a Board of Directors.

Board: Particularly means the Board of Directors of a statutory body or company, i.e. a non-executive Board. Can also mean an autonomous organisation established by or under an Act of Parliament to carry out specific functions within defined areas, accountable to a Minister through a Board of Directors, i.e. an executive Board.

Catchment: An area drained by a stream, lake or other body of water. It can also refer to an area which drains into a dam.

Clustering: The grouping of water supply and sewerage services in a number of local government areas under one statutory / autonomous body in order to achieve commercial viability. Clustering can be based either on regional and local government boundaries or river basins, depending on the number of local government authorities (LGAs), potential viability, social/cultural factors, and geographical proximity.

Commercial: Ownership of water supply assets is transferred to autonomous legally established organisations (c.f. Authorities) with responsibility for the provision of water supply and sewerage services and the collection of revenues, and the organisations have full responsibility and accountability for the maintenance, protection and expansion of the assets.

Community: A group of households, hamlets or villages which are served by a common water supply facility whereby responsibility for maintenance, protection and expansion wholly or partially rests on the users.

Community Owned: Ownership of water supply assets is transferred to legal entities established by communities (c.f. Water Consumer Associations) and the communities have full responsibility and accountability for the maintenance and protection of the assets.

Community Water Supply: Shall mean inter alia, water supply for a rural setting.

Cost Recovery: Reimbursement to providers of water supply and sewerage services of both recurring and non-recurring costs associated with operation, administration and maintenance. Costs include but are not limited to the costs of design, development, upgrades, equipment and any other costs associated with capital investment.

Coverage: is an output indicator, whether water supply or sanitation e.g. number of connections to sewerage system. This is what the sector purchases with the financial resources in a particular period.

Drainage Basin: A hydrological area consisting of part of the surface of the earth covered by a drainage system made up of surface water streams, or bodies of impounded surface water and the tributaries.

Household Connection: Water supply connections to domestic properties having internal plumbing.

Peri-urban Areas: Emerging settlements outside the formal housing areas of an urban area. In these settlements there is lack of basic services such as water supply and sanitation facilities. Generally the people living in these areas are in the low-ncome group with limited ability to pay for water and sanitation services.

Public Tap: A tap or water distribution point which is used by a number of different consumers who pay for water drawn, and which is commonly found in peri-urban areas, informal settlements, and rural water supplies.

Rainwater Harvesting: A technology used for collecting and storing rainwater from land surfaces, rock catchments or rooftops using simple techniques such as jars and pots as well as more complex techniques such as charco dams.

Regulation: The activities involved in ensuring consumers receive the most cost effective level of service that they have been led to expect and are prepared to pay for. Specifically this involves: protecting consumers; assuring a demand driven approach; improving efficiencies and effectiveness of service providers; protecting assets; and promoting competition.

River Basin: An entire geographical area drained by a river and its tributaries (also referred to as a watershed).

Rural setting: Settlement with village socio-economic life style, whether within or outside an urban area.

Sanitation: While a broad definition of sanitation covers the state of cleanliness of the environment and includes a wide range of waste management activities, within the context of this Programme sanitation is defined as the provision of appropriate facilities and services for the on-site disposal of human excreta and waste waters, and public education on water-related hygienic principles.

Sector Wide Approach to Planning (SWAP): A situation where financial resources for capital investment, from both Government and development partners, are provided in support of jointly agreed expenditure strategies and plans, under Government leadership.

Service Provider: An institution or organisation with actual or delegated responsibility for providing water supply and sewerage or sanitation services to consumers. Service Providers can include *inter alia* local government authorities (LGAs), water user associations, water user trusts, non-government organisations, and private operators.

Sewerage: Human excreta disposal systems relying on water as the waste transporting medium.

Small Towns: Secondary emerging settlements (mainly in rural areas) that have transformed from village status into small township status. In the context of the WSDP, ñ*Small Towns*ò also means ñ*Townships*ò.

Stakeholders: Any and all organisations and persons having a direct interest in the Water Sector.

Trans-boundary Waters: The water resources contained within Drainage or River Basins which cross the geographical boundaries of more than one sovereign country.

Urban Area: Urban Area means an area within the jurisdiction of an authority established or deemed to have been established under and governed by the Local Government (Urban Authorities) Act, 1982; and the Local Government (District Authorities) Act, 1982.

Water Consumers Association (Vikundi vya Huduma ya Maji): A legal entity established by communities for the ownership, management, operation and maintenance of water supply services.

Water Scarcity: The situation occurs when demand for water exceeds the available amount during a certain period or when poor quality causes restrictions, and calls for better management of the limited water resources.

Water Users Association (Vikundi vya Watumiaji Maji): A legal entity established by the users of water resources within a specified area to manage the allocation of water resources and resolve conflicts amongst water users within that area.

Yard Connection: Water supply connections to domestic properties which have a tap in the compound of a property or attached to the property, but with no internal plumbing.

EXECUTIVE SUMMARY

1. The Policy Environment

Water supply and sanitation services in the 1990s were still inadequate despite major investments in the sector in the 1970s and 1980s, among others, due to inadequate community and private sector participation in implementation and management of water facilities. The Government prepared the first National Water Policy in 1991, to address the sector challenges; however, emphasis was put on the central government as the sole implementer and provider leading to unsustainable management and development of water resources. The policy was then revised into the National Water Policy (NAWAPO 2002) which introduces elements of devolution and public and civil service reforms. It is strongly influenced by national policy instruments that address issues of poverty and economic development, and incorporate water sector reforms as one of several related components which, when combined, offer a multi-sector approach to poverty reduction and economic growth.

Key policies such as the National Development Vision 2025 set the stage for the Poverty Reduction Strategy Paper (PRSP) and the Rural Development Policy (RDP), which were then supported by the local government and Public Sector Reforms. The comprehensive review of the PRS led to the MKUKUTA (Mkakati wa Kukuza Uchumi na Kuondoa Umaskini) that sets operational goals and puts policy in a functional framework, which in the water sector is embodied in the National Water Sector Development Strategy (NWSDS) of 2005. The NWSDS sets out the strategy for NAWAPO implementation and in turn guides the formulation of the sub-sectoral investment programmes, as inputs into the Water Sector Development Programme (WSDP). The sectorôs strategy has guided the preparation of the three sub-sector programmes: the Rural Water Supply and Sanitation Programme (RWSSP), the Urban Water and Sewerage Programme (UWSSP), and the Water Resources Management Programme (WRMP). The Water Sector Development Programme consolidates the three components including strengthening of the general administration of MoW; Drilling and Dam Construction Agency (DDCA) and the proposed Water Resources Institute (WRI) and Maji Central Stores (MCS) Agencies, using a Sector Wide Approach to Planning (SWAP).

The central policy instrument for all these programmes is the NAWAPO 2002. The key lesson learned from previous experience is that, to achieve sustainability, water supply and sanitation facilities must be owned and managed locally by organisations that are both close to, and accountable to the consumer. NAWAPO recognizes financing of water resources management through the application of a Water User Fee (WUF), broadens the stakeholdersô role in planning, operation and management in decision making, and promotes autonomy at the basin level. Experience shows that WRM functions in all the basins could be financed in the long run through WUF to meet the cost of regulatory functions at the basin level.

These principles are central to NAWAPO which embodies effective institutionalised linkages between key sector actors, including central government, local government, External Support Agencies (ESAs), the private sector, non-government organisations (NGOs), community-based organisations (CBOs), and the communities. Under NAWAPO, the Government continues to provide the necessary technical and financial support, as well as coordination and regulation of water supply development activities. The private sector provides support to the communities in planning, design, construction and supply of

materials, equipment, spare parts, and in some cases, operations. The ESAs and NGOs provide funding and technical assistance.

In partnership with ESAs and other key stakeholders, the Government has adopted a Sector Wide Approach to Planning (SWAP), based on community-demand orientation, decentralised management through local governments and dedicated water user entities or authorities, combined with central government facilitation and delivery of services by the private sector.

SWAP brings together the three sub-sectorsð rural water supply, urban water supply and sewerage, and water resources managementð under one comprehensive investment and regulatory regime. The SWAP is in direct response to the NAWAPO. June 2003 marked the start of a three-year transition period of preparation of the WSDP intended to: (i) lay the foundations for a SWAP; (ii) prepare the necessary investment plan; (iii) build service delivery and water resources management capacity at all levels; and (iv) establish the necessary regulatory framework for sustained delivery of water supply services country-wide.

2. Programme Consolidation Approach

The approach for consolidation of the sub-sector programmes followed a two-fold methodology. First, MoW prepared a draft consolidated document that put together all the important programmatic implementation areas envisaged in the sub-sector. Secondly, the draft WSDP was presented at a stakeholdersô workshop for comments. Using such an approach, one can conclude that participation of stakeholders was as high as during the policy review, formulation of the NWSDS and preparation of sub-sector programmes. This will enhance the potential for sustainability of the WSDP during programme implementation, especially through the established joint MoW-DPG/water coordination and collaboration arrangements.

3. Programme Objectives

Tanzaniaôs Development Vision 2025[1] aims at achieving an absence of abject poverty and attaining a high quality of life for all people by 2025. Water supply, sanitation and water resource management features prominently in the Development Vision. Intrinsic to these overall targets, are the objectives of equity of access, water management capacity, and proper maintenance of water and sanitation systems, use of environmentally sound technologies, and effective water tariffs, billing and revenue collection mechanisms.

In the shorter term, MKUKUTA[2] commits Tanzania to achieving the Millennium Development Goals (MDGs) for access to safe water, sanitation and a sustainable environment, while also setting targets for 2010. The MKUKUTA targets for WRM are: to reduce water-related environmental pollution levels from 20% in 2003 to 10% in 2010; and integrated water resources management operational in all basins by 2010. The targets are to increase proportions of the rural population with access to clean and safe water from 53% in 2003 to 65% by 2010, 79% by 2015 and to 90% by 2025 for the rural population. It also calls for increased access to clean and safe water to the urban population to rise from 73% in 2003 to 90% by 2010, to 95% by 2015; and by 100% by 2025. The water supply service

[1] United Republic of Tanzania, (1999), ñDevelopment Vision 2025 for Tanzaniaò Dar es Salaam.
[2] Vice Presidentôs Office (2005) ñNational Strategy for Growth and Reduction of Povertyò (NSGRP ï MKUKUTA), Dar es Salaam, The United Republic of Tanzania.

to achieve MKUKUTA targets, a total of 12.6 million additional people will benefit, while for MDG targets, further 11.5 million people will benefit. In order to meet the Development Vision, a further 24.7 million will benefit from the improved water supply.

Implementation of the Programme will be supported by the executive agencies, which will be strengthened to improve their financial and commercial performance.

4. Programme Components

The Water Sector Development Programme is designed under SWAP to address shortfalls in urban and rural water supply infrastructure, to improve water resource management primarily through upgrading the countryôs nine Basin Water Offices (BWOs), and to strengthen the sector institutions and their capacities. Small towns and rural settings of the towns, municipalities and cities have been included in the RWSS component. Separate details pertaining to each and every small town are contained in a separate chapter for easy identification of interventions during programme implementation.

A set of Operational Guidelines and Manuals have been prepared on a sub-sector basis to guide the implementation process of sub-sector specific issues.

4.1 Water Resources Management

An important objective of the programme is to develop a sound water resources management and development framework in all nine basins, and to promote good governance of water resources throughout Tanzania. Implementation will be with the active participation of all stakeholders at the national and basin levels through their respective boards.

The basin-level component is by far the most extensive of the WRM programme. Its main focus is the establishment and strengthening of the nine BWOs. In addition to support for the staffing and physical infrastructure of the BWOs, considerable attention is given to strengthening their capacity in water resources monitoring, assessment and enforcement. Other activities include: protection of important water sources; water demand management; strengthening legislation and enforcement; integrated water resources planning including dam construction; trans-boundary water body management; and a variety of cross-cutting activities including disaster management, public awareness, inter-agency networking and establishing a water resources management information system.

At the national level, MoW will be strengthened through recruitment and training of staff, provision of equipment, creation of a national water resources information centre, and technical collaboration on research, dialogue and information exchange with co-riparian states. Drought, flood and manmade disaster (chemical or petroleum spills) management capabilities will be strengthened. Early warning systems will be established. Also a national communications and awareness programme will be developed as a cross sectoral activity to strengthen harmonisation and coordination of water resources plans and policies among key related sectors and stakeholders.

4.2 Rural Water Supply and Sanitation

Twenty-four (24) districts had a ñhead startò having begun implementation of the Rural Water Supply and Sanitation Projects through different initiatives. All districts have been

included in the RWSSP during 2006/2007; some already have begun construction and others are at the planning stage.

In the early years of the plan, higher rates of investment and coverage are allocated to those districts with lower coverage. Overall, projections for coverage meet the long-term 2025 target of 90% while the interim milestones of 2010 and 2015 are exceeded. This is due to the application of a measured and graduated rate of progress and expenditure resulting in coverage rates of 69% in 2010 and 79% in 2015 compared to the planned 65% and 74%, targets respectively.

Construction will be relatively slow during the first two years while Regional Water Supply and Sanitation Teams (RWSTs) and District Water and Sanitation Teams (DWSTs) train, prepare, set up project management systems and gain experience in district-based water and sanitation programming. In subsequent years, each district will build its implementation capacity, averaging about 1.6 million new water users per year programme-wide. The pace of work will peak during 2016 to 2020 with an average of 1.9 million new beneficiaries per year.

On the basis of the populations to be provided with new access to services, water supply coverage was disaggregated by technology type across the programme period. The above projections are the product of several determining factors at the district level, including the existing technology mix in the district; and the number and percentage of residents currently without access to a safe water supply. By 2025 the largest proportion (31%) is estimated to be served by shallow wells equipped with hand pumps, 25% by pumped-piped systems, 21% by gravity-flow piped systems, and 17% by boreholes equipped with hand pumps. A limited number of locations will be served by protected springs, windmills, rainwater catchment or charco dams.

Sanitation promotion including latrine upgrading and hygiene improvements will be carried out in parallel with water supply programming. In this way facilitation, training and promotion efforts reinforce one another.

4.3 Urban Water Supply and Sewerage

The UWSAs are to be transformed into WSSAs (Water Supply and Sanitation Authorities), which will be licensed and regulated by EWURA. Separating the regulatory, management and monitoring functions will enable Boards to concentrate on managing their Authorities as commercial entities, while the regulator will ensure efficiency and equity and Consumer Consultative Councils will protect the welfare of the community.

In the meantime the UWSAs will be strengthened through improvements in demand forecasting, water sources assessment and planning, control over unaccounted-for-water, water quality management, network analysis, tariff setting and billing systems, control over operating costs and aging arrears, and the acquisition of investment funding.

All existing 19 UWSAs and DAWASA need investment in infrastructure. While several authorities have ongoing or planned donor-funded projects, others are receiving little assistance other than government grants for small projects. Priority is given to towns that have not previously received significant donor funding and urgently require assistance to upgrade their water supply systems. Requirements include refurbishment, upgrading and extension to existing water supply systems including source development and in some cases treatment plants. In some towns, resource assessments are needed for improved planning of

future water source development. Improved sewerage facilities will be needed in all towns as they increase in size and their water supply systems expand. Sanitation studies are recommended for most towns and are expected to recommend expansion of wastewater collection and treatment facilities for those towns that currently have sewerage networks and the development of limited wastewater collection and treatment facilities in towns that currently have no sewerage networks.

4.4 Sector Institutional Strengthening and Capacity Building

Implementation of the WSDP would be done at different levels from sub catchments, through district and basin levels, up to the national level. The institutions and personnels at these levels will be strengthened to provide effective administrative support for the programme implementation. Strengthening will include, among others, office construction, rehabilitation, training, provision of office equipment, MIS and transport.

Since 1998, the MoWôs units that were identified for executive agencies are the Drilling and Dam Construction Agency (DDCA), Water Resources Institute (WRI) and the Maji Central Stores (MCS). Ever since, DDCA is operating as an Executive Agency while WRI and MCS are to be established. The ultimate aim of establishment of executive agencies is to change them into being autonomous and financially independent, and therefore graduating from Government subsidy. To effectively strengthern the DDCA and MCS, thorough studies and reviews will be conducted to define best options for supporting implementation of WSDP. For the Water Resources Institute, the study will be broadened to reflect the broader question of human resources planning and development for the sector and the role of the Institute in the implementation of WSDP. It is planned that DDCA and MCS will be financially autonomous by year 2010, while the WRI shall become financially autonomous by year 2015.

4.5 Safeguard Policies

The WSDP will trigger three safeguard policies, namely Environmental Assessment; Involuntary Resettlement; and International Waterways. The Environmental and Social Management Framework (ESMF) provides a strategic guide for the integration of environmental and social considerations in the planning and implementation of the WSDP activities including issues related to International Waterways. The Resettlement Policy Framework (RPF) aims to protect impacts due to involuntary resettlement from implementation of the WSDP activities. The policy requires that the implementation of individual resettlement and compensation plans are a prerequisite for the implementation of Programme activities causing resettlement thereby ensuring that resettlement and compensation is in place.

5. Costs and Financing

5.1 Costs

The total cost of the four components of the Water Sector Development Programme are estimated at TZS 4,207,980 million (USD 3,366.38 million)[3], to be invested over the 2006 ï 2025 timeframe (Table 5.1).

The cost of the WRM component is estimated for the 2006 ï 2025 period at TZS 416,600 million (USD 333.28 million) all of which will be invested in basin-level activities.

[3] The exchange rate used for the conversion of TZS to USD throughout this report is TZS 1250 per USD.

The RWSS component covers the 2005/06 ï 2025 period, addressing the timeframe encompassed by Development Vision 2025. During this period, overall investment requirements to achieve the above objectives in rural water supply and sanitation coverage are estimated at TZS 2,054,120 million (USD 1,643.30 million).

The Urban Water and Sewerage component calls for investments for the construction of physical works for individual UWSAs as well as investments for capacity building projects designed to strengthen the capacity of MoW and the UWSAs to operate, maintain and develop the urban water supply and sewerage systems. The Urban Water Supply and Sewerage (UWSS) investment requirements up to 2025 a total TZS 1,392,620 million (USD 1,114.09 million).

The investment programme budgets are merged into a basic structure for comparative purposes. Three major investment categories were used: capital investment; management and operations support; and sector institutional strengtherning and capacity development:

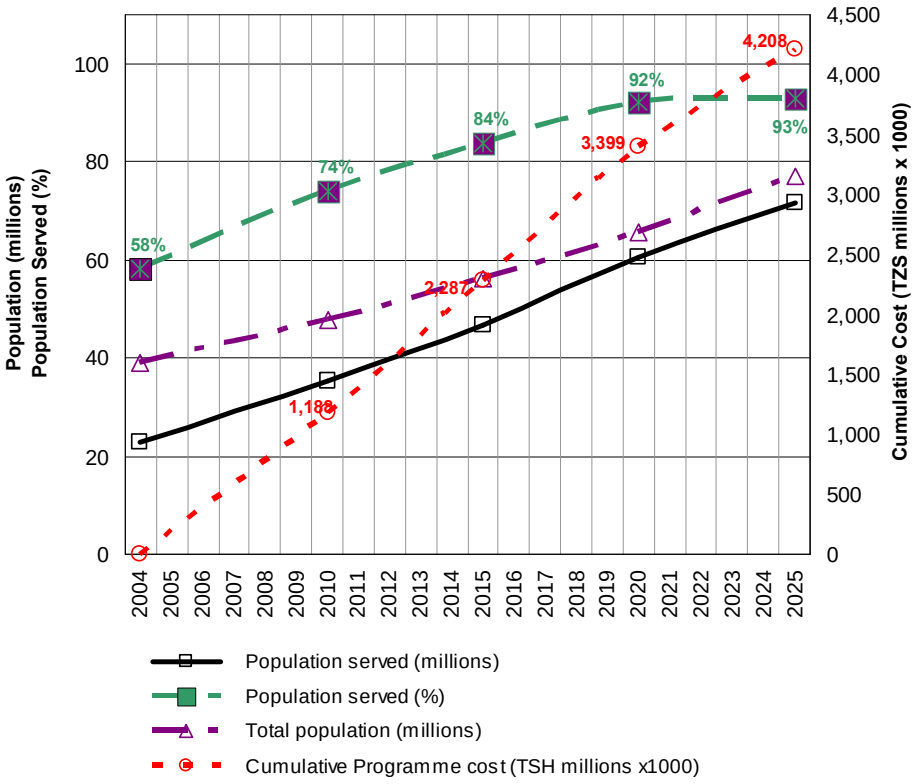
- Capital Investment [TZS 3,487,960 million (USD 2,790.37 million)]: The major portion of investment requirements is allocated to capital costs within all three programme components, including among other items: rural water supply and sanitation and urban water supply and sewerage systems; building construction and rehabilitation; office furniture, equipment and computers; vehicles; and technical equipment.
- Management and Operational Support [TZS 375,370 million (USD 300.30 million)]: These costs relate largely to district operational support under the RWSSP and basin-level operational support under the WRMP (no such support is envisaged under the UWSSP), including: vehicle operations, travel expenses, staff salaries support, and other items.
- Sector Institutional Strengthening and Capacity Building [TZS 180,770 million (USD 144.62 million)]: All three programme components include investment in capacity development of various kinds at district, basin, UWSA, regional, executive agencies, and national levels.

Also, a contingency of TZS 163,870 million (USD 131.10 million) has been included.

Table ES1: Water Supply Coverage Projections vs. Programme Cost

POPULATIONS & COVERAGE RATES (Beneficiaries x 10^6)						
	2006	**2006-10**	**2011-15**	**2016-20**	**2021-25**	**Total**
Population Served Per Period		12.6	11.5	13.7	11.0	48.7
Cumulative Population Served by Programme		12.6	24.1	37.8	48.8	48.8
Cumulative Total Population Served	22.8	35.4	46.9	60.6	71.6	71.6
Projected National Population	39.1	47.7	56.1	65.6	77.1	77.1
Coverage Rate (%)	58%	74%	84%	92%	93%	93%
Total Programme Cost Per Period		**1,188.8**	**1,098.5**	**1,112.2**	**808.5**	**4,208.0**
Total Cumulative Programme Cost		**1,188.8**	**2,287.3**	**3,399.5**	**4,208.0**	**4,208.0**

Figure ES1: Water Supply Coverage vs. Programme Cost, 2006 - 2025



5.2 Financing

Estimates provided in the three programme documents (WRMP, RWSSP, UWSSP) indicate that a total of approximately TZS 2,975,930 million (USD 2,380.74 million) might be available. These include government central budget allocation, rural community and small town contributions, district contributions, water resource revenues, and NGO and donor funds, among others. Thus, in order to carry out the scope of activities envisaged under the WSDP, a financing gap on the order of TZS 1,232,050 million (USD 985.64 million) is to be filled required over the 2006 ï 2025 period.

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In this context, the WRMP investment plan proposes that water use revenues will grow from about TZS 661.0 million (USD 0.53 million) per annum in 2006 to approximately TZS 12,500 million (USD 10.00 million) per annum over a ten year period, or by 2015.[4] Beyond this, though not discussed in the WRMP report, revenues are assumed to grow at least in pace with 3% inflation.

[4] WRMP February 2006, Figure 10.1

Government allocations to the sub-sector, estimated at TZS 2,740 million (USD 2.19 million) in 2006 are projected to grow to TZS 4,020 million (USD 3.22 million) by 2010.[5] Beyond this period, though not discussed in the WRMP report, government allocations are assumed to be sufficient to meet the financing gap between water resource management costs and anticipated revenues. In this case, the requirement for government allocation actually decreases beginning in 2016 as revenues increase over time.

These assumptions result in financing gap of TZS 26,910 million (USD 21.53 million) over the 2006-2025 period, after which no further external financing (loans or grants) would be required. It is expected that some of the BWOs will become fully autonomous and accountable basin entities by year 2015.

WSDP in respect of RWSSP will cost a total of TZS 2,054,120 million (USD 1,643.30 million) over the programme period from 2006 to 2025. Government allocations to the rural water sector are estimated to grow from TZS 2,460 million (USD 1.97 million) in 2005 to TZS 7,800 million (USD 6.24 million) by 2007. Beyond this period, government allocations are assumed to increase at 5% per annum. Rural communities are expected to contribute an average of 5% to capital costs of the RWSSP, totalling TZS 91,600 million (USD 73.00 million) over the period 2006 - 2025.[6]

Other funding, from NGOs and external donors are estimated for this same period at TZS 1,042,020 million (USD 833.61 million). These assumptions result in an estimated TZS 1,325,860 million (USD 1,060.69 million) in available resources over the timeframe of the RWSSP. Given this, the financing gap between available resources and estimated RWSSP costs is estimated at TZS 728,260 million (USD 582.61 million) over programme timeframe.

Resources identified as likely to be available for capital projects were estimated at approximately TZS 1,186,020 million (USD 948.81 million) over the 2005 ï 2020 period[7].

The financing for the ongoing DAWASA project includes: Government contribution of USD 12.6 million, IDA USD 61.5 million, ADF USD 48.0 million and EIB USD 34.0 million). A total of USD 60.45m has been disbursed and USD 59.33 expended leaving available balance of USD 104m as of June 2006.

WSDP will strengthen and develop the water sector institutions as well as personnel at different levels. This component will contain the following sub-components:

- Operationalisation of new roles of the MoW including strengthening of executive agencies;
- Technical assistance for sub-sector planning;
- Sector coordination and performance monitoring; and
- Sector capacity building and training.

The total resource requirement for institutional strengthening and capacity building for the period 2006 ï 2025 is TShs. 180,770 million (USD 144.62 million). Resources likely to be available are estimated at TZS 74,360 million (USD 59.49 million). Therefore the financing gap is estimated at TZS 106,410 million (USD 85.13 million).

[5] WRMP February 2006, Table 8.4.
[6] RWSSPRWSSPRWSSP 2006, Table 5.14
[7] UWSSP ï SIP March 2006, Table 4.11

Sustainable implementation of the WSDP requires holistic planning and financing, stable financial mechanisms and availability of adequate funds for capital investments for infrastructure expansion, rehabilitation and water resources management. This also requires appropriate channelling of the resources to the prioritized needs. Indicative percentage proportion of funds to sub-sectors are 50:20:15:15,[8] to RWSSP, WRM, UWSSP and cross cutting aspects (planning, accounting, general administration and executive agencies), respectively. The proportions may change in accordance with circumstances at the time.

5.3 Channelling of Funds

The main source of financing is the GoT complemented by resources from development partners. Funds from development partners will be channelled through the Ministry of Finance (MoF) under the General budget support, and then will flow in two ways: first from MoF to programme implementers: namely the BWOs, LGAs, UWSAs and executive agencies. Secondly, financing of MoWôs monitoring activities will be channelled from MoF to the MoW. Accountability procedures including monitoring and reporting will be as specified in the Medium-Term Expenditure Framework (MTEF) execution procedures, based on government public financial management acts and other programme implementation operational guidelines.

6. Institutional Arrangements

The National Water Policy has prescribed new roles for different players in the provision of water supply and sanitation services. The policy guide in NAWAPO is based on six key principles: the Governmentôs role should be limited to coordination, policy and guideline formulation and overall sector regulation; implementation management and executive functions will be decentralised to the lowest appropriate level, while balancing consumer representation/participation with economies of scale; responsibility for regulation will be separated from the prioritisation and allocation of capital investment funds; autonomous entities will be established to manage water supply and sewerage services in urban areas; and community organisations will own and manage water supply schemes.
This shift in policy direction calls for adoption of a more effective institutional framework for the provision of water and sanitation services to urban and rural population. Equally important, the institutional framework for water resources management will be streamlined to meet the challenges of effective integrated water resources management.

The current institutional framework for WRM falls short of meeting the challenges of effective management of the resources and in providing an adequate mechanism for effective consultation and consensus building, and participation of stakeholders in the planning, design, operations, and management decision-making process.

The lack of an effective institutional framework for management of water supply and sanitation services in rural areas has led to overlapping roles among the various institutions; inadequate co-ordination among the various agencies and inadequate communication and awareness building between these agencies and local organisations and water users.

Since establishment of UWSAs, the Ministry of Water has continued to play a major role in their organisation and management in accordance with a Memorandum of Understanding

[8] Proceedings of Stakeholder Retreat on Sector Wide Approach to Planning in the Water Sector, MoWLD, Arusha, May 2003

(MoU) and Operational Guidelines. While these interventions have been helpful in guiding development and management of the Authorities in their formative years, they ultimately restrict opportunities for the UWSA Boards and management to provide leadership in the way the Authorities are managed.

The role of central government, through the Ministry responsible for Water, will be that of co-ordination, support and capacity building, monitoring and quality assurance, policy and guideline formulation, and regulation. The current responsibilities for the provision of water supply and sanitation services will be transferred to successor organisations. The local government authorities (LGAs) will have responsibility for public service provision including water and sanitation in the future.

The WRM and WSS institutional frameworks will be based on the following principles:

1. Responsibility for the provision of water supply and sanitation services is to be held by local government authorities.
2. Clustering of water supply and sanitation services under the responsibility of adjacent local government authorities should be aimed at commercial viability.
3. Legal transfer of assets to water and sanitation entities should be done while ensuring that communities are protected against confiscation and asset stripping.
4. Capital investment financing, and operational support through local government should be separated from regulation and performance monitoring.
5. Tariffs should be linked to performance as part of the regulatory function.
6. Water basin offices should be transformed into autonomous bodies.

The institutional framework for the WRM will incorporate new institutions to facilitate harmonious integration and participation of all stakeholders. These will be the National Water Board, Basin Water Boards, Catchments Water Committees and Water User Associations or Groups.

The institutions for the provision of water supply and sanitation services are of three types: ñClusteredò WSSAs; Service Providers; and Community-owned Water Supply Organisations (COWSOs). Regulation of the WSSAs and Service Providers will be by EWURA, while regulation of the COWSOs will be by the Ministry responsible for Water, through delegation to local authorities.

7. Monitoring and Evaluation

The framework for the Monitoring and Evaluation (M&E) system for the WSDP takes into account the existing national framework for monitoring and evaluating progress in poverty alleviation, development and the water sector. This national framework includes a national Poverty Monitoring System (PMS), a Joint Assistance Strategy (JAS) M&E system and M&E systems used by development partners.

The JAS overall objective is to contribute to sustainable development and poverty reduction by consolidating and coordinating government efforts and development partners support. development partners (DPs) have recently set up a Development Partnersô Group ï Water (DPG-Water) as a result of discussions concerning the JAS. One of its functions is monitoring of sector performance.

The structure for the water sector dialogue as put forth by DPG-Water is based on a High Level Forum, a Water Sector Working Group and several Technical Working Groups. Each has a specific role with regard to M&E of water sector developments, including the WSDP.

The primary role for M&E in the WSDP rests with the MoW through the oversight Water Sector Working Group that will produce an Annual State of the Water Sector Report covering all aspects of the sector. This report will, together with Resources Tracking Studies and Technical and Financial Audits, form the basis of Joint Sector Reviews and input into the Annual MKUKUTA performance reviews.

Other key entities performing M&E activities for the WSDP will be: Basin Water Offices; Energy and Water Utilities Regulatory Authority (EWURA); UWSAs/WSSAs, RWSTs, LGAs, and their District Water and Sanitation Teams, and MoW executive agencies.

The essential components of the M&E framework for the WSDP are: (i) the use of a results-based Logical Framework Analysis (LFA) and Performance Measurement Framework (PMF) and (ii) Management Information Systems (MISs).

A results-based management approach for monitoring and evaluation uses the LFA and associated PMF. A baseline study will be carried out at the start of the WSDP to obtain the necessary baseline data for the LFA and PMF. The baseline study will be a collaborative effort so information gathering will make efficient use of resources and so that information can be used by the various entities involved in M&E activities.

The final M&E system design will ensure that maximum use is made of existing data collection and monitoring systems such as the Household Budget Survey, Demographic and Health Survey and Population and Housing Census that are used as part of Tanzaniaôs Poverty Monitoring System.

One of the tools that will be used to monitor and evaluate the success of the WSDP will be Management Information Systems (MISs). MISs will be used to collect, store, analyse and disseminate information and data on the WSDP sub-projects. An MIS has already been successfully developed and is being tested for the RWSSP in twelve districts.

This MIS is part of the planning, management and monitoring system, and incorporates the tracking of performance indicators for RWSSP sub-projects. It includes an information storage database, systems for tracking sub-projects, and digitisation of documentation. Lessons learned from the RWSSP MIS will be incorporated into the expansion of the MISs for the RWSSP for all districts in Tanzania and for development of MISs for other components of the WSDP, including the UWSSP and the WRM components.

1. INTRODUCTION

1.1 Background

Despite its importance to quality of life and development, water in Tanzania is a finite and vulnerable resource being unevenly distributed in space, time, quantity and quality across the country. Tanzania faces a water security crisis in some parts of the country, as water demands exceed available resources. Water scarcity raises concerns over issues of its allocation, use, quality and availability. Competition for water is rising due to increased demands of irrigation, hydropower generation and other uses. Past uncoordinated water resources planning and management has resulted in conflicts between the energy and agriculture sectors, between use for production and environmental protection, between water supply and wastewater discharge and between upstream and downstream users.

Low water supply coverage impacts most severely on the poor. The poor make their own, often insufficient arrangements to meet their needs for basic survival. Most end up fetching water over long arduous distances; others are forced to pay high prices for small quantities of poor quality water.

Water plays a key role in Tanzaniaôs Development Vision[9], which aims at achieving an absence of abject poverty by 2025. Its targets include the attainment of a quality of life that is socially desirable, economically viable and environmentally sustainable. To reach these goals, several achievements are called for including increased access to safe water to be raised to 90% by 2025. Subsumed are the objectives of equity of access, strengthening water management capacity, proper maintenance and use of environmentally sound technologies.

The later National Strategy for Growth and Poverty Reduction (MKUKUTA, 2005-2010)[10] calls for reducing poverty through economic reform, targeted government resource allocations accelerated rural economic development, and improved water supply, health and education services. Improved water supply (65% rural and 90% urban coverage by 2010) was identified as one of the top seven priority poverty reduction strategies.

Combined, these goals and the poverty they aim to mitigate represent enormous challenges to the Government and civil society in the years ahead. The goals provide an integrated framework for development that, for this sector, establishes guidelines for progress and ambitious but achievable targets to meet.

1.2 Country and Sector Overview

Located in East Africa, Tanzania has a mainland area of 945,000 km^2 and a population of 33.6 million[11] of which three quarters live in rural areas. It is one of the poorest countries in the world with per capita income estimated at USD 282 and GDP of USD 9.4 billion at annual growth rate of 6.3% by year 2004. The national population growth rate is recorded at 2.8% and the national poverty rate is 35.7% of the population and a low Human Development Index of 40.7[12].

[9] United Republic of Tanzania, (1999), ñDevelopment Vision 2025 for Tanzaniaò Dar es Salaam. www.tzonline.org.
[10] Vice Presidentôs Office (2005) ñNational Strategy for Growth and Reduction of Povertyò (NSGRP ï MKUKUTA), Dar es Salaam, The United Republic of Tanzania.
[11] National Census 2002.
[12] The Economist (2006) World in Figures, London, UK ISBN 1 86197 957 6.

Tanzania is endowed with numerous and diverse water resources in the form of rivers, lakes, wetlands and groundwater. However, the reality is that severe and widespread water shortages exist in many areas both because of climate variability, uneven distribution of the resource in time and space, and inadequate management of the water resources. The variation is explained by differences in topography, rainfall pattern and climate. About one third of Tanzania receives less than 800 mm of rainfall per annum and is considered as arid or semi arid.

The 5.4 million hectares of lakes and swamps represent 5.8% of the total land area. About 50% of the surface runoff water flows directly to the Indian Ocean. The other half consists of surface water drainage to the main internal drainage basins of lakes Rukwa, Bubu, Eyasi and Manyara and drainage to lakes Victoria, Tanganyika and Nyasa.

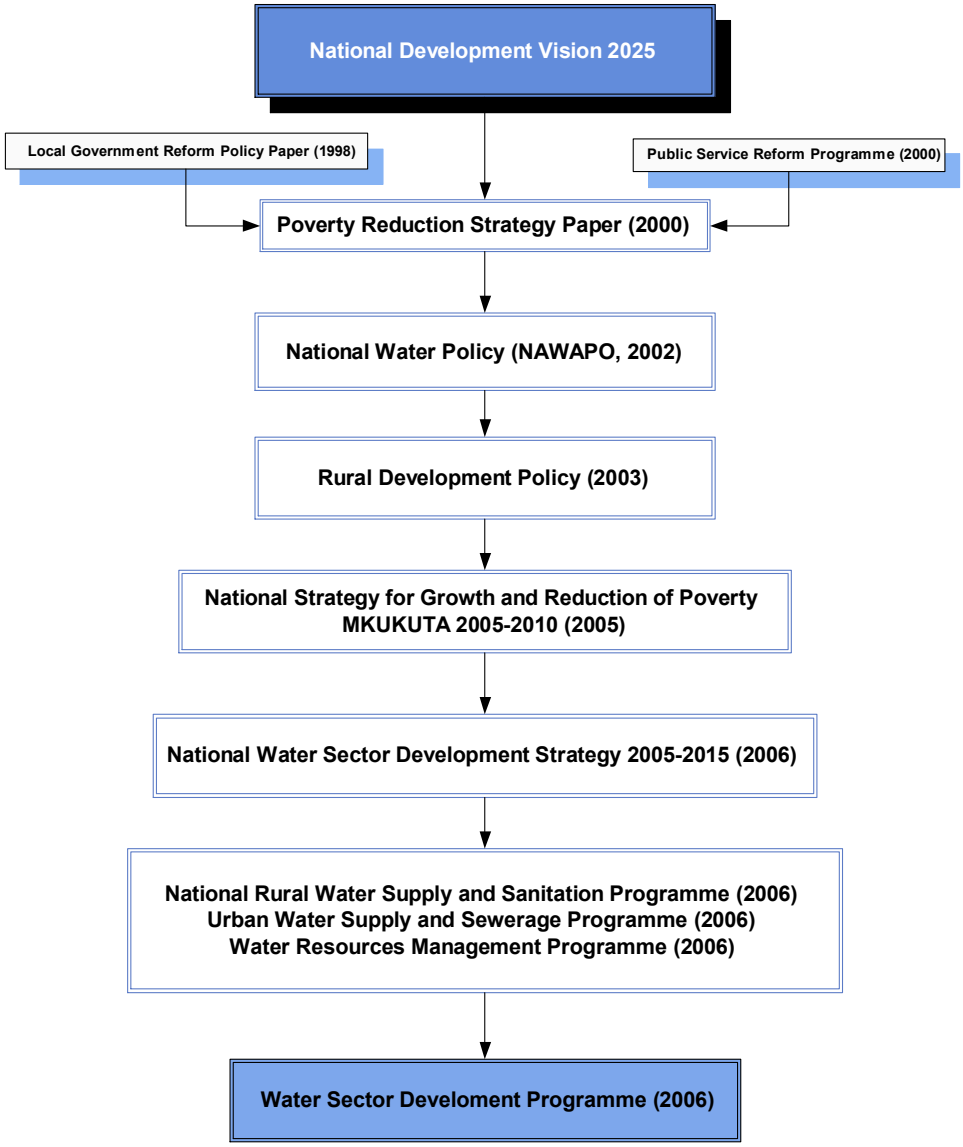
The ultimate responsibility for the provision of water supply and sanitation services rests with the MoW. However, different central and local government departments and organisations have mandates to be involved in the provision of these services. In particular, local government, be it at the city, municipal, town, district, or township authority level, has varying levels of responsibility for providing services, and the Ministry of Health and Social Welfare (MoH&SW) has an overall responsibility for protecting public health through ensuring the provision of adequate sanitation and hygiene education by the local authorities. Other ministries include the Prime Ministerôs Office ï Regional Administration and Local Government (PMO-RALG) and the Ministry of Finance (MoF), which have administrative and financial relations with Regional Administration and LGAs respectively.

The MoW holds overall responsibility for water resources management. However, a number of other departments and agencies manage water resources according to their own mandates and needs, their own legislative provisions, with little coordination and integration towards holistic basin-wide planning and management.

1.3 Policy Environment

Water supply and sanitation services in the 1990s were still inadequate despite major investments in the sector in the 1970s and 1980s, among others, due to inadequate community and private sector participation in implementation and management of water facilities. The Government prepared the first National Water Policy in 1991, to address the sector challenges but put emphasis on the role of central government as the sole implementer and provider leading to unsustainable management and development of the water resource. The policy was then revised into National Water Policy (NAWAPO, 2002) which introduces elements of devolution and public sector and civil service reforms. It is strongly influenced by national policy instruments (see Figure 1.1) that address issues of poverty and economic development, and incorporate water sector reforms as one of several related components which, when combined, offer a multi-sector approach to poverty reduction and economic growth.

Figure 1.1: Linkage of WSDP with National Policies and Strategies



Key policies such as the 1997 National Development Vision 2025 set the stage for the PRSP, and the RDP that were then supported by the local government and Public Sector Reforms. These led to the MKUKUTA, which sets operational goals and puts policy in a functional framework that, in the water sector is embodied in the National Water Sector Development Strategy of 2005. The sectorôs strategy has guided the preparation of the three sub-sector programmes: the Rural Water Supply and Sanitation Programme (RWSSP), the Urban Water and Sewerage Programme (UWSSP), and the Water Resources Management Programme (WRMP). The Water Sector Development Programme consolidates the three components using a Sector Wide Approach to Planning (SWAP).

The central policy instrument for all these programmes is the NAWAPO 2002. The key lesson learned from previous experience is that to achieve sustainability, water supply and sanitation facilities must be owned and managed locally by organisations that are both close to, and accountable to the consumer. This can only be achieved if the responsible organisation at the community level is trained and empowered, and contributes meaningfully at all stages of planning, design, implementation and long-term maintenance and repair of the facility.

These principles are central to NAWAPO which embodies effective institutionalised linkages between key sector actors, including central government, local government, ESAs, the private sector, NGOs, CBOs, and the communities themselves. Under NAWAPO, the Government continues to provide the necessary technical and financial support, as well as coordination and regulation of water supply development activities. The private sector provides support to the communities in planning, design, construction and supply of materials, equipment and spare parts. The ESAs and NGOs provide financial and technical assistance and funding.

1.4 Sector Development Challenges

1.4.1 Water Resources Management

Tanzaniaôs high economic growth masks some structural weaknesses related to the management of an essential natural endowmentô water resources. Food security, energy security, environmental security, health security, industrial security, and social and economic security all hinge directly or indirectly on water security. In ensuring a secure and sustainable future for its people the Government of Tanzania (GoT) faces a complex water resources management and development challenge.

Water security remains an elusive goal in Tanzania, despite the fact that it is relatively well endowed with freshwater resources. Water insecurity is compounded by (a) inadequate investments in constructed water storage and other water resources infrastructure to buffer against the impact of droughts and floods (climate variability) and inadequate investments in water quality management and pollution control; (b) investments in costly but unreliable infrastructure, and (c) inadequate investments in water resources management systems, institutions, and regulations, which has created a climate of poor governance and is contributing to water-use conflicts, threatening water sources and the destruction of natural storage capacities.

While measurable progress has been made in achieving specific targetsô especially in the delivery of services, such as increasing water supply coverage and hydropower generation capacityô the necessary institutional and legal reforms for water resources management have evolved very slowly. Water resources institutions are poorly resourced and poorly functioning. Huge infrastructure gapsô for water supply, for meeting energy demand and for food security needsô remain. Important lessons learned from recent projects have yet to be internalised and acute water resources governance problems persist. The concept of integrated water resources management adopted in the past decade is not uniformly understood, accepted, or properly supported.

1.4.2 Rural Water Supply and Sanitation

For a long time, the government has been the owner and operator of rural water supply systems. This has lead to a lack of commitment by communities to sustain their facilities. It

has also led to overlap of roles and inadequate coordination. The existing water supply systems are unable to meet water demands. This has lead to the prevalence of water borne diseases and loss of productive time that is used to search for, collect and transport water.

Implementation of projects and programmes is done through different approaches resulting in overlaps of responsibilities and interventions that are not cost effective.The provision of water service has been done without the active involvement and ownership of the beneficiaries, leading to unsustainable service delivery. It is estimated that about 30% of all rural water supply schemes in the country are non-functioning.

Operation and maintenance (O&M) of water supply schemes has not reached the level of full cost recovery, due to socio-economic conditions pertaining to the rural areas. Schemes operate only to recover operation and maintenance costs. For large schemes, government subsidy is still granted to offset electricity bills, chemicals and salaries. For hand pump schemes, availability of spare parts at the district level is not certain because they are not fast moving items in the market. This has led to malfunctioning of some of the schemes.

1.4.3 Urban Water Supply and Sewerage

Under the Water Works Order of 1998, 19 UWSAs were established as ñautonomousò bodies. They are now functional but challenged by many deficiencies. The most fundamental problem is that they do not yet fully exercise their autonomy. This is the case despite the fact that all UWSAs are implementing their Strategic Plans that give strategic direction towards full cost recovery. Boards are autonomous in decision-making and members are professional but have varying levels of skills and experiences. While blaming financial limitations for limited progress, the UWSAs are reluctant to increase tariffs to commercial levels.

Few authorities are replacing worn out equipment, and most depend on donor aid or grants from MoW for major refurbishments. Likewise, some UWSAs and DAWASA have rationalised their approach to maintaining and repairing distribution network. Due to inadequate leakage detection facilities, responses are only made to visible leaks.

Most of the UWSAs Finance departments have computerised billing systems and four are relying on manual systems. The average level of arrears in the UWSAs is high at around six months of accounts receivable, most being owed by households, but many also by institutional customers.

1.4.4 Limited Financing for Expansion and Improvement of Services

There are several concerns related to programme financing. (1) in the past, sector financing preferered was through bilateral financing of individual projects under a myriad of policies and implementation arrangements instead of a more consolidated approach. However, most DPs have made progress towards financial harmonisation and general budget support mechanisms. (2) Budget sources and donor financing need to be substantially expanded to reach the MKUKUTA, MDG and Vision 2025 targets for water resources management and water supply and sanitation coverage. (3) Beneficiary communities are responding to their new roles, however there is still a commonly held belief that water should be free which, when combined with existing levels of poverty, reduces their ability and willingness to pay for services.

1.4.5 Capacity Constraints

NAWAPO introduced an entirely new approach to implementing water supply and sanitation and water resources management. Traditionally, the sector has been centrally controlled and implemented. Under NAWAPO, consultations and planning starts from the grass roots; implementation is at the most appropriate level, closest to the beneficiaries. User groups are not only responsible for operating, maintaining and sustaining the infrastructure, they are also responsible for planning and managing it.

Under NAWAPO, the Rural Water and Sanitation sub-sector has successfully developed an implementation model for replication countrywide. Capacity gaps were anticipated and occurred at district and regional levels. Capacity building starter activities are underway to strengthen Regional Secretariats in training and support foci for DWSTs. Greater capacity building efforts are needed to strengthen the community, the facilitation service providers (FSPs) and the technical service providers (TSPs) who also are unfamiliar with NAWAPO and community-based implementation methods.

1.4.6 Sanitation and Sewerage

Household budget (2001) surveys suggest that sanitation coverage (as measured by access to latrines) is as high as 90%. However, most latrines fail to meet MDG defined standards for sanitation. By MDG standards, coverage would be closer to 50%. Sanitation has failed to attract the required level of resources. When resources are available, they are commonly spent on technology and subsidies instead of on the necessary promotion, planning and skills development within the community. Successful rural sanitation programming is rare in Tanzania and indeed across Africa. There are few implementation models to emulate.

Tanzanian urban growth rates are among the highest in the world. With improved water supply and increasing population densities, even the smaller towns with populations of 50,000 and above are reaching the point whereby inadequate wastewater removal and treatment is constraining economic development. Sewerage and sewage treatment is often more expensive than water supply. Households and commercial establishments are reluctant to pay the cost of house connections and additional tariffs. Consequently, connection rates are slow even where sewer mains have been built and onsite disposal made illegal.

1.4.7 Stakeholder and Private Sector Participation

There are several issues and concerns surrounding the direct involvement of stakeholders and the private sector.

(i) The WSDP opens new avenues for collaboration between sectors that have traditionally operated in isolation. Examples include the health, agriculture, forestry, and power sectors, and even local government itself. Substantial effort will be needed to ensure their active participation. Fortunately, devolution and NAWAPO policies offer real incentive and opportunities for participation and cooperation between sectors.

(ii) The private sector is actively participating in the water sector but is relatively weak (especially at the district level where it is most needed) and it is not familiar with the requirements of district implementation and community management. Greater effort and resources for capacity building and quality assurance in the private sector is needed.

(iii) Government retaining the role of decision-maker undermines real community involvement in project planning and ownership. The process of bottom up planning needs strengthening.

(iv) There is a natural bias for schemes to favour the more powerful and better off at the expense of the poor. Women and marginal groups are being left out of the decision-making process.

(v) Those entrusted to manage the newly established community water supply entities have little management experience, which will likely result in conflicts at the community level.

1.4.8 Establishment and Strengthening of Executive Agencies

Under the Ministry of Water, three executive agencies were established. These were the Drilling and Dam Construction Agency (DDCA), the Water Resources Institute (WRI) and Maji Central Stores (MCS). The ultimate aim of the Agencies is to make them financially autonomous. The Agencies are not working at an optimum capacity due to dilapidated and outdated equipment, and inadequate management skills. The challenge is to strengthen the Agencies in order to make them sustainable. At present the three Agencies depend on government subsidy to carry out their operations.

1.5 Scope of Programme

The WSDP comprises three components under the SWAP framework: the Water Resources Management Programme (WRMP), the Rural Water Supply and Sanitation Programme (RWSSP) and The Urban Water Supply and Sewerage Programme (UWSSP). Funding is currently being sought for the first four years (2006-2010) of WSDP through the Government Budgetary System (GBS) and other agreed funding mechanisms that disaggregates the WSDP into three Support Blocks in accordance with the level at which they will function:

(i) Local Government - Scaling up of Services Delivery to meet MDGs;

(ii) Basin Level - Strengthening of Water Resources Management Governance; and

(iii) National Level - Support to Sector Institutional Strengthening and Capacity Building.

This section provides a brief description of the Water Resources, and Rural and Urban components of the overall 2005-2025 WSDP. More detail on the scope of the components of the WSDP is provided in Section 4.

1.5.1 Water Resources Management

The objectives of the WRM component are to (1) develop a sound water resources management and development framework in all nine water basins, and (2) promote good governance of water resources through empowering the water users, encouraging participatory and transparent decision making, developing ownership to the user level, and granting secure water rights with responsibilities to the water users, community groups, local government and Basin Boards.

The main focus of this component is on the establishment and strengthening of the nine Basin Water Offices (BWOs). Apart from support for staffing and physical infrastructure of the BWOs, considerable attention is given to strengthening their capacity in water resources

monitoring, assessment and enforcement. Other subcomponent activities include: water quality management and pollution control, protection of important water sources; water demand management; strengthening legislation and enforcement; integrated water resources planning; trans-boundary water management; and a variety of cross-cutting activities such as disaster management, public awareness, inter-agency networking and establishing a water resources management information system. The programme will also implement priority infrastructure investments that may result in more secure water resources and promote conservation and protection of water resources. For semi-arid areas of Tanzania where rains are more erratic and unreliable, the programme will promote sustainable livelihood approaches including rainwater harvesting, construction of small, medium and big dams.

1.5.2 Rural Water Supply and Sanitation Programme

The RWSSP has three main components:

1. Rolling out the district implementation model countrywide and providing district management support to:
    a) create and strengthen DWSTs within local government enabling them to prepare district RWSS plans, and appraise RWSS sub-projects proposed by communities;
    b) install a district RWSS funding mechanism to finance new and rehabilitated RWSS facilities;
    c) build community capacities to properly maintain and operate their facilities; and
    d) promote hygiene, sanitation and HIV/AIDS mitigation and prevention.

2. Investment in community-based water and sanitation sub-projects:

    Conditional grants are being allocated to WSS projects proposed by communities themselves for drilled wells, boreholes with hand pumps, piped systems using pumped water from boreholes or gravity-fed water from springs, and latrines. The DWSTs employ local NGOs and firms as facilitation service providers (FSPs) and consultant engineers as technical service providers (TSPs) for design and construction supervision. A supply chain that includes private retail outlets is being established to distribute spare parts for hand pumps.

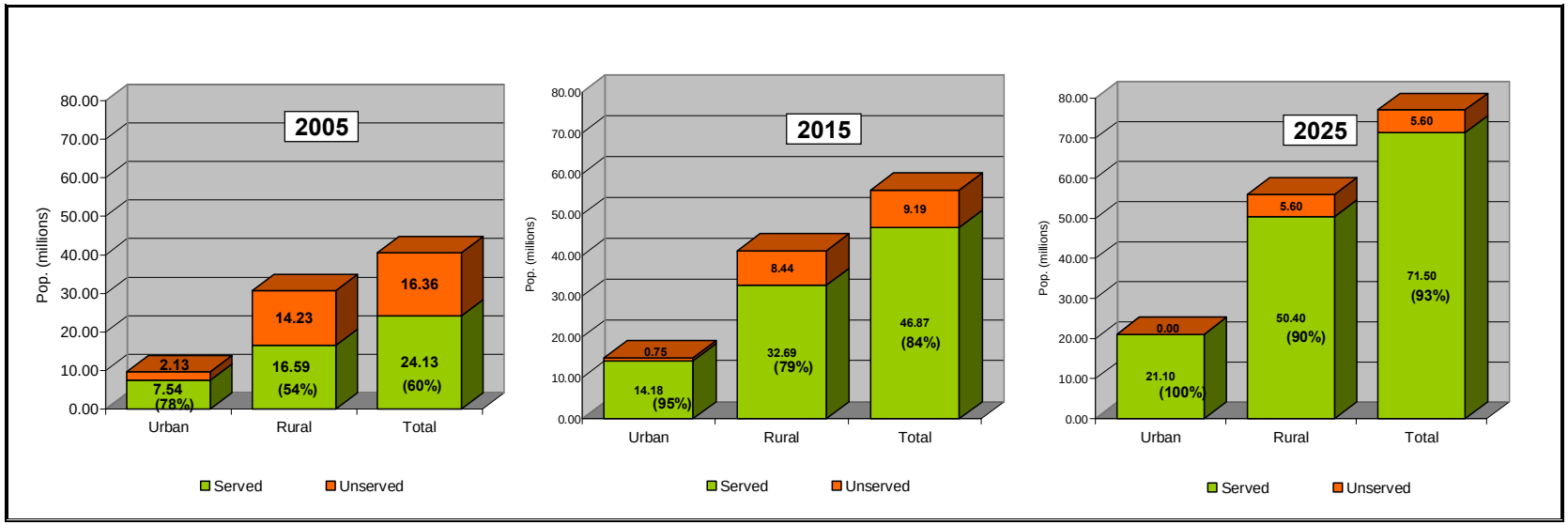
3. Institutional strengthening and development of a Rural Water Supply and Sanitation Programme (RWSSP):
    a) a stakeholder consultative process;
    b) technical assistance and support to project management;
    c) a web-based MIS which will link all districts, track coverage, sub-project progress, and lessons learned, and;
    d) restructuring RWSS institutions within MoW, and strengthening stakeholders: FSPs, TSPs, goods and services suppliers, Districts, Regional Secretariats and MoW.

The MoW coordinates the programme and provides technical support to districts in establishing DWSTs, preparation of District Water Supply and Sanitation (DWSS) plans and establishing dedicated DWSS Funds. Participating communities provide cash contributions of at least 5% of sub-project capital cost and prepare facilities and management plans that emphasize financial and operational sustainability.

FSPs facilitate and strengthen village Water and Sanitation Committees (WATSANs), enabling them to plan their sub-projects, select their service levels and technologies and prepare applications for district support. DWSTs appraise community applications, enter into agreements with successful communities, provide technical designs, procure FSP, TSP and contractor services, and jointly supervise construction with the village WATSANs. The DWST is also responsible for continued monitoring and providing technical advice to the community to ensure long-term sustainability of the services. The FSPs and TSPs provide technical designs, strengthen WATSANs, increase community awareness, and assist in putting mechanisms into place for the continued operation, maintenance, repair and management of the facilities, including the collection of fees and the management of funds.

The overall objective of the RWSSP is improved quality and quantity of drinking water and sanitation services for the rural population sustained through improved district level capacity, effective local water user entities, private sector participation and good health, hygiene, and sanitation practices. The RWSSP includes both rural and all small town populations. By 2015 it will increase coverage of these populations from 54% in 2005 to 79% (see Figure 1.2). In doing so, it will meet the MDGs for the rural areas. Likewise, it will increase coverage levels to 90% by 2025 in accordance with Vision 2025 goals. In all, the RWSSP will provide services to an additional 33.8 million people by 2025.

Figure 1.2: Population Projections for Access to Safe Water Supply (millions)



1.5.3 Urban Water Supply and Sewerage Programme

Urban coverage calls for the raising of water supply services from 78% today to 95% by 2015 to meet the MDGs and 100% for Vision 2025 (see Figure 1.2). In all, 13.6 million urban dwellers will have received improved services by 2025.

The UWSSP focuses on resource requirements for DAWASA and the 19 UWSAs. Beyond service coverage, it will also implement a new institutional framework, and build capacity in these and the future WSSAs and EWURA. This includes: licensing and regulating under key performance indicators; strengthening their commercial management and staffing; improving services delivery by outsourcing functions to the private sector; improving performance through benchmark networking; strengthening the weaker utilities by twinning them with stronger ones; and building technical capacities (in particular demand forecasting, water resources development planning, control over unaccounted-for-water losses, and instigating network mapping and strengthening connection metering). Ultimately all authorities will need to become commercial organisations with increasing responsibility for meeting their own operation and maintenance costs and capital investments. This will require raising tariffs while getting a better understanding of the willingness and ability to pay and assisting the poor through differential charging, introducing modern billing systems, full ownership of assets, better management of customer debt, and capital investment through grants and loans.

1.6 Programme Consolidation Approach

The WSDP is a consolidation of the three sub-sector programmes. This WSDP Consolidated Document gives a summary of the sub-sector programme components wherein detailed information can be found. In order to have an effective monitoring of implementation of the WSDP, the programme has included strengthening of the general administration of MoW as well as strengthening of the executive agencies in the water sector to effectively participate in the implementation of the WSDP and also become autonomous and independent.

The approach for consolidation of the sub-sector programmes followed a two-fold methodology. First, MoW prepared a draft consolidated document that puts together all the important programmatic implementation areas envisaged in the RWSSP, WRMDP and UWSSP. The draft WSDP was presented to stakeholders for comments. Using such an approach, one can conclude that the participation of stakeholders that was as high as during the policy review, formulation of the NWSDS and preparation of sub-sector programmes. This will enhance the potential for sustainability of the WSDP during programme implementation, especially through the established joint MoW-DPG/water coordination and collaboration arrangements.

2. STRATEGIC CONTEXT AND RATIONALE

2.1 National Development Strategies

The overall long-term goal of socio-economic development for Tanzania by the year 2025 is to attain sustainable human development with all the prerequisites for achieving a fully developed economy. Tanzaniaôs Development Vision 2025[13] aims at achieving an absence of abject poverty and attaining a high quality of life for all people by 2025 meaning that people will have attained respectable levels of income, enhanced ownership of assets, reduced vulnerability, and increased power over their own future. Water supply and sanitation is seen as an essential tool in the effort to reduce the levels of poverty and to mitigate its effects, especially in the rural areas where it is endemic. Subsumed are the objectives of the enhancement of equity of access, water management capacity, and proper maintenance. Likewise, the use of environmentally sound technologies is stipulated, as well as effective water tariffs, and billing and revenue collection systems for all water users.

Building on the Development Vision 2025, the National Strategy for Growth and Reduction of Poverty (NSGRP ï MKUKUTA)[14] has become the second national framework for putting priority focus on poverty reduction. It was endorsed by Cabinet in February 2005. It expresses commitment to the MDGs. It also builds on the Poverty Reduction Strategy Paper (PRSP, 2000-03), and the Medium-Term Plan for Growth and Poverty Reduction that emphasize growth momentum to fast track the targets of Vision 2025. It calls for reducing poverty through economic reform, targeting government resource allocations, accelerating rural economic development, and improving water supply, health and education services. The MKUKUTA goal for the water sector is access to clean, affordable and safe water, sanitation, decent shelter and a safe and sustainable environment and thereby, reduced vulnerability from environmental risk. Translating this goal into operational targets, it calls for increased proportion of the rural population with access to clean and safe water from 53% in 2003 to 65% in 2010. Likewise it calls for increased access to clean and safe water to the urban population to rise from 73% in 2003 to 90% by 2010 where a total of 12.6 million additional people will benefit throughout the country.

Closely allied to Tanzaniaôs Development Vision and MKUKUTA are its programmes in Public Service[15] and Local Government Reform[16]. Local government reforms have transformed local governments into multi-sectoral units with legal status, with responsibility for social development and public services provision within their jurisdiction, including water supplies, education, health, agriculture and roads. The Public Service Reform Programme is restructuring the Public Service to improve performance and accountability, particularly in services delivery, including water supplies. At the heart of both reform programmes are decentralisation and a change in central-local government relations. Line ministries are changing their roles and functions into becoming: (i) policy makers; (ii) supportive with capacity building; (iii) monitoring and quality assurance oriented; and (iv) regulating bodies. Administrative decentralisation involves de-linking local authority staff from their respective ministries and making them accountable to local councils. Financial decentralisation involves councils having powers to levy taxes while also receiving continuing support through grants from the centre.

[13] United Republic of Tanzania, (1999), ñDevelopment Vision 2025 for Tanzaniaò Dar es Salaam.
[14] Vice Presidentôs Office (2005) ñNational Strategy for Growth and reduction of Povertyò (NSGRP ï MKUKUTA), Dar es Salaam, The United Republic of Tanzania.
[15] Presidentôs Office, Public Service Management, United Republic of Tanzania (2000), ñPublic Service Reform Programme 2000-2011.ò
[16] PORALG (1998), Policy Paper on Local Government Reform.

2.2 Status of the Water Sector

Tanzania is undergoing major political, social and economic reforms with the main goal of addressing its widespread poverty and promoting economic growth. Major reforms in the water sector are underway, in the water supply and sanitation sectors, including decentralisation, full cost recovery and an increased role for the private sector are being embraced. A strategy for managing cross-sectoral water resources issues and challenges using river basins as units for planning and managing water resources is under implementation in all its nine basins.

Tanzania faces water scarcity, while it is in the midst of abundance. It has experienced frequent and severe water shortages resulting into water use conflicts, while at the same time is riparian to the three largest freshwater lakes in Africa. The numerous international water bodies that Tanzania is riparian to compound the water management challenge. It is amongst the nations with the largest proportion of land area under protection and conservation, yet it is facing species extinctions. Water resources depletion and rising demand on limited water supplies put some of the water-related investments at risk by creating competition for water and conflicts between users. Extensive irrigation during the dry season dries up the rivers, thus disturbing ecosystems and wildlife. Inefficient water uses such as low irrigation efficiencies (10 to 15%), and leakages from domestic water supplies (up to 52%) contribute to reduction in water availability. Climate variability makes water supply uncertain and vulnerable.

In 2005, some 16.6 out of 30.8 million mainland people in rural areas and small towns, and 7.5 out of 9.7 million people in urban areas, had access to safe drinking water. The quality of service remains poor largely due to most water sector investments not being adequately maintained. To achieve the National Strategy for Growth and Reduction of Poverty (MKUKUTA) targets, 12.6 more million people will need improved water supply by 2010, and to reach MDG targets, an additional 11.5 million people will need services by 2015. Then, to meet the Development Visionôs target of 90% coverage by 2025, a further 24.7 million will need improved water supply (Table 2.1).

Table 2.1: Projections for Access to Safe Water Supply (millions)

YEAR	POPULATION TYPE											
	Rural		Small Towns (Rural)		Rural Subtotal		Urban		National			
	Pop.	*Coverage*	*Pop.*	*Coverage*	*Pop.*	*Coverage*	*Pop.*	*Coverage*	*Pop.*	*Coverage*		
2005	26.7	14.6 (55%)	4.2	2.0 (48%)	30.8	16.6 (54%)	9.7	7.5 (78%)	40.5	24.1	(60%)	
2010	30.8	21.3 (69%)	4.7	3.0 (64%)	35.5	24.4 (69%)	12.2	11.0 (90%)	47.7	35.3	(74%)	
2015	35.7	28.2 (79%)	5.5	4.5 (82%)	41.1	32.7 (79%)	15.0	14.2 (95%)	56.1	46.9	(84%)	
2020	41.6	37.1 (89%)	6.3	5.7 (90%)	47.9	42.8 (89%)	17.8	17.8 (100%)	65.6	60.5	(92%)	
2025	48.7	43.8 (90%)	7.3	6.6 (90%)	56.0	50.4 (90%)	21.1	21.1 (100%)	77.1	71.5	(93%)	

Tanzaniaôs urban population is growing at a rate of more than 6% per annum, which is exerting enormous strain of the delivery water and sanitation (including sewerage) services. Presently, only three quarters of the urban population has access to reliable water supply services. Between a third and a half of the urban population lives in unplanned or squatter areas characterised by high population densities and deficiencies in water and sanitation services. Major issues and challenges facing the urban water supply and sanitation services sector include inadequate water supply both in quantity and quality, poor billing and revenue collection, lack of an enabling environment for private sector participation and the

widely held belief that water is a God given resource to which no price can be attached.
It is clear that integrated water resources management is needed to ensure that water does not become a constraint to national development. The traditional approach is sector oriented and does not fully recognise the multi-sectoral linkages in planning the use of water resources. It is oriented more towards the development of water resources and not on the protection or management of water resources, and is based on regulation as a primary instrument for implementing water policy. The integrated approach addresses participatory, multi-sectoral, multidisciplinary river basin management, which recognises that water is a scarce resource and integrates the linkage between land use and water use and recognises the important role water ecosystems play in the national economy.

2.3 Water Sector Policy Reform

Tanzania reaffirmed its commitment to the MDGs when it formally agreed to the Millennium Declaration at the United Nations (UN) General Assembly of 6-8 September 2000[17]. The National Poverty Reduction Strategy (NPRS), the PRSP, and MKUKUTA, as well as the Joint Assistance Strategy (JAS), all identify safe and adequate water provision, especially in rural areas, as a key development concern. Tanzaniaôs progress towards the goals related to poverty, HIV/AIDS, basic household amenities, food security, education, gender equity, under-fivesô mortality, reproductive health, and environment were reported on early this year[18]. The MDG target is set to ñhalve the proportion of people unable to reach or afford safe drinking water by 2015ò.

The UN Millennium Project has recently published the Tanzanian Country Study[19], which highlights the status of poverty in the country and the enormous challenges facing achievement of the MDGs, including water supply and sanitation.

The NAWAPO, introduced in 2002, incorporates the principles of the Governmentôs Development Vision, Poverty Reduction Strategy and Local Government Reform Programme (LGRP), in recognition of the need to ensure the sustainability of facilities provided and to make those facilities more equitable.

Tanzaniaôs water sector received major ESA investment and technical assistance during the 1970s and 1980s. With some notable exceptions, most infrastructures were not backed by long-term O&M support. Many facilities have fallen into disrepair and have since been abandoned. The key lesson learned is that to achieve sustainability, water supply and sanitation facilities must be owned and managed locally by organisations that are both close to, and accountable to the consumer. Long-term sustainability is only achieved through ownership by the user-community and their assumption of responsibility for long-term management and maintenance. This can only be achieved if the responsible organisation at the community level is trained and empowered, and contributes meaningfully at all stages of planning, design, implementation and long-term maintenance and repair of the facility.

The policy reaffirms the principle that sustainability of Water Resources Management (WRM) and Water Supply and Sanitation services requires that beneficiaries take the lead in developing and management of water resources and their WSS facilities and be fully responsible for their O&M. The private sector will provide support to communities in the planning, design, construction and supply of materials, equipment and spare parts. The

[17] UN General Assembly (2000) UN Millennium Declaration, A/RES/55/2.
[18] UNDP (2004) IDT/MDG Progress: United Republic of Tanzania.
[19] Millennium Project Secretariat and the ESRF (2004), Millennium Development Goalsô Needs Assessment.

Government will continue to provide the necessary technical and financial support, as well as coordination and regulation of WSS development activities. The ESAs will also provide financial and technical support.

The National Water Policy

The National Water Policy, approved in July 2002, guides the reforms to water resources management, rural water supply and urban water supply and sanitation.

The management of water resources is guided by the following principles:

1. Separation of service delivery and water resources management.
2. Management responsibility is devolved to river basins, catchments, and water user groups.
3. Planning is an inter-sectoral process involving all stakeholders.
4. The value of water is recognised through charges for water use and pollution discharge.
5. Environmental water allocations are needed to ensure river health.
6. Trans-boundary waters are managed through a cooperative approach.

The management of rural water supply and sanitation services is guided by the following principles:

1. Human consumption is the highest priority water use.
2. Water-scarce areas receive priority.
3. Water is an economic good requiring financing by water users at full cost recovery for Operation and Maintenance costs.
4. Water resources need to be protected for the benefit of rural water users.
5. Beneficiaries of rural water schemes will own and manage their schemes.
6. Technology and the level of service will be commensurate with the economic capacity of users.

The management of urban water supply and sewerage services is guided by the following principles:

1. Access to water and sanitation is the right of all citizens, including the poor.
2. Cost recovery is vital to ensure quality.
3. Service delivery is to be decentralised and accompanied by institutional reforms.
4. Wastewater treatment must be paid for by water users.
5. Private sector participation is encouraged.
6. The regulatory framework will be independent and transparent.

These principles are to be backed up by legislation.

Integration of water supply, sanitation and hygiene promotion will require close collaboration with other actors in the sanitation area of the sub-sector. This new approach requires effective institutionalised linkages between key sector actors, including central government, local and municipal governments, ESAs, the private sector, NGOs, CBOs, and the beneficiaries themselves.

2.4 Adoption of a Sector Wide Approach to Planning

The water sector is currently facing the major challenges of weak institutions for water supply and water resources management. In response, and in partnership with ESAs and

other key stakeholders, the Government has adopted a Sector Wide Approach to Planning (SWAP), based on community-demand orientation, decentralised management through local governments and dedicated water user entities or authorities, combined with central government facilitation and delivery of services by the private sector.

SWAP brings together the three sub-sectorsð rural water supply, urban water supply and sewerage, and water resources managementð under one comprehensive investment and regulatory regime. The SWAP is in direct response to the NAWAPO. June 2003 marked the start of a three-year transition period intended to: (i) lay the foundations for a SWAP; (ii) prepare the necessary investment plan; (iii) build service delivery and water resources management capacity at all levels; and (iv) establish the necessary regulatory framework for sustained delivery of water supply services country-wide.

2.5 National Water Sector Development Strategy

The NWSDS[20] sets out the strategy for NAWAPOôs implementation. This, in turn, guides the formulation of the MoW medium-term strategic plan and the sub-sectoral investment programmes, as inputs into the medium-term expenditure framework and financial planning processes.

Within the context of SWAP, the NWSDS provides a coherent, holistic and integrated strategy for the water sector in order to implement the directives of NAWAPO. This has facilitated an overall strategic framework for the preparation of the WSDP and the review of water sector legislation.

2.6 Related Sectoral Policies

Water is a basic natural resource and a fundamental input to various socio-economic development activities, such as industrial production, irrigated agriculture, livestock development, mineral processing, and hydropower production, land and forestry, etc. Each of the sectoral policies relate to NAWAPO in different ways. Since water resources management and water supply and sanitation are multidisciplinary and multi-sectoral activities, the individual health, environmental, local government reform, rural development, land and settlement, and forestry policies, etc. provide strategic linkages to the NAWAPO, and supplement the aims and objectives of NAWAPO as envisaged under this programme.

Health Policy: The vision of the Ministry of Health and Social Welfare is to provide health services of high quality that are effective and accessible to all, and delivered by an effective and sustainable national health care system. Health sector policy emphasizes the need for adequate supply of water and basic sanitation for minimising water borne diseases, and recognises that the health of the individual, the family, and the community at large is dependent on the availability of safe water supply, basic sanitation and improved hygiene.

Environmental Policy: The environmental policy objectives for the water sector are geared to ensuring that planning and implementation of initiatives related to water resources are carried out in an integrated manner, and in a way that protects water catchment areas and their vegetation. Environmental policy promotes EIAs and sustainable water management by closely collaborating with the National Environment Management Council (NEMC), the Division of the Environment of the Vice Presidentôs Office, and other agencies.

[20] MoW (2006) National Water Sector Development Strategy, Dar es Salaam.

Implementation of the environmental policy gives NEMC the authority to set standards and issue permits for the discharge of effluents into the environment, including into water bodies. The roles and responsibilities of the Basin Water Offices and the NEMC in controlling pollution will need to be reviewed and harmonised under this programme.

The Forestry Policy recognises that water sources are one of the key pre-requisites for local and international development. The policy stresses the fact that population pressure and inefficient forestry management and protection have contributed to the deterioration of catchment forest areas, causing water shortages. The Forestry Policy in conjunction with the Land and Settlement Policy, (discussed below) needs to address measures for protecting important catchment areas, recharge areas and springs and other key water sources, and zoning flood prone areas.

Local Government Policy: The overall objective of the Local Government Policy is to improve service delivery by making local authorities more democratic and autonomous within the framework established by the central government. The policy identifies the provision and facilitation of water (and sanitation) services as an important responsibility of local government. The policy is intended to create viable entities, develop required local government/central government relations, establish the necessary legal framework, and develop the necessary capacities for effective performance by local government organisations. The policy not only confirms the legitimacy of local authorities, but also helps them generate more revenue, reduce costs, and operate water facilities more efficiently.

The policy also envisages that the future magnitude of grants to local government will depend on the performance of the authorities, the state of the economy, and the financial consequences of reducing the implementation role of ministries through decentralisation and privatisation. Implementation of local government policy will provide a conducive and complementary environment within which the NWSDS will operate, although a prime challenge remains in terms of leadership and decision-making, manpower inputs and funding.

Rural Development Policy and Strategy (RDPS) acts as a platform on which sector ministriesô policies are coordinated, harmonised, and integrated, to give the rural development process a holistic view. In the case of the water sector, the RDPS states that:

- The central government and Local governments will pursue and/or promote an integrated approach to rural water supply and sanitation, productive activities and human consumption;
- The central government, Local governments and other stakeholders will mobilise funds and attract private resources to ensure increased supply of safe water within household proximity; and
- The central government will create an environment conducive to private sector participation in developing rainwater-harvesting technology that is appropriate for rural areas.

The new implementation arrangements and requirements are in compliance with the overall principles of reform in the public sector, and the Local Government Reform Programme (LGRP).

Land and Settlement Policy: The National Human Settlement Policy and the National Land Policy are two different policies, but they both recognise the existence of unplanned

settlements in most urban areas. Unplanned settlements in rural areas can lead to significant degradation, soil erosion, pollution of streams, etc., all impacting on downstream and in-stream water users. In turn, these settlements will bring about unplanned water demands that can impact other users who have water user rights through permits. The former calls for the upgrading of those settlements through the provision of basic infrastructure services, such as roads, water supply and sanitation.

Energy Policy: Hydropower is emphasized as a viable and less expensive source of energy. More than 60% of electrical power is generated through hydropower plants, and more is available for development. Although hydropower is not a consumptive water user, it requires large storage reservoirs situated in areas with high evaporation losses, safe management of dams and reservoirs, resolution of conflicts with downstream and upstream water users, management of floods and minimisation of negative impacts to the environment.

Agricultural Policy advocates the use of irrigation to improve food security, increase agricultural productivity and income and produce higher value crops. Achieving anticipated agricultural and livestock targets will require a considerable contribution of water as a basic resource for agriculture development. With water resources being available in large lakes, reservoirs and rivers, there is good potential for agricultural development through irrigation which will draw on these resources and, thus, require effective resource management practices in the future.

2.7 Lessons Learned

The following section looks at some of the achievements, challenges and lessons learned in the water sector.

2.7.1 A Strong Policy Platform

The lack of substantive progress in the water sector despite major investments in the sector over the past thirty years highlights the complexity and challenges to sector development. A strong policy framework is an essential starting point, yet it took over a decade after the 1991 National Water Policy was first formulated before key lessons learned were incorporated in the later 2002 National Water Policy (NAWAPO).

The 2002 NAWAPO incorporates sound principles of water resources management including separation of operational and policy and regulatory functions; involvement of stakeholders at both policy and operational levels; reinforcement of economic incentives (charges for water use and penalties for pollution discharge); and coordination across water-using sectors.

The national water sector strategy, legislation, and institutional framework are being finalised to implement the policy. Success must ultimately be judged by improvements in outcomesð that is, the reliability and quality of the countryôs water resources for the productive sectors of the economy (such as agriculture, energy, fisheries, industry, livestock, tourism, and mining) and the access of all people to those resources. Implementation is difficult; nevertheless, this policy lays the foundation for success.

A solid policy, institutional, and legal framework is necessary but is, in itself, not sufficient. The reformsð new policies, institutions, laws, strategies, and financesð are being developed and put into place, but they also need to be implemented. For example, Basin

Water Offices were authorised as far back as 1981, but implementation only commenced in 1991 and was completed only recently. The lesson learned is that while the framework for the reforms is an impressive achievement, their implementation has been patchy and needs to be adequately resourced and strengthened.

2.7.2 Institutional Reorganisation

Coupled with policy reform come the challenges of institutional reorganisation and change management. The MoW has been reorganised to realign regulatory functions and to reduce parallel tracks of operations and duplication of functions. An effective operational arrangement has yet to be established to implement the water policy; oversee the Basin Water Offices; coordinate cross-sectoral efforts to control water pollution; protect water sources; support the management of international waters; and oversee the development of guidelines for water resources management.

The MoW is strengthening decentralised management of water basins. All nine river and lake basin offices have been formally established. Two basins (Pangani and Rufiji) have been operationalised having received significant donor support. The Wami-Ruvu Basin Water Office (WRBWO) is receiving financial support as part of the Dar es Salaam Water Supply and Sanitation Project. The experience from these three BWOs in managing water resources is being replicated in other river basins.

The lesson learned is that although there is sufficient existing capacity for the institutional framework to be implemented at the national level, the basin organisations have yet to be fully functional and effective and this is essential if the devolution of responsibility to basin level is to succeed.

During the 1970s and ô80s the Government, donors and NGOs planned and implemented water supply and sanitation schemes with little or no involvement of the beneficiaries or even local government. Although the beneficiaries became more involved during the 1990s, they failed to assume ownership of their schemes and effectively assume managerial roles in operating, maintaining and paying for their schemes. Many institutions and agencies became involved with varying policies and approaches to implementation. Overlapping responsibilities and even competition between agencies took place in an increasingly complex and unsustainable institutional environment.

NAWAPO has set the stage for institutional change. The lesson being learned is that in both urban and rural WSS, implementing decentralisation is often a slow and difficult process. Reluctance to change is understandable as stakeholders perceive risks in the change and can misunderstand their new roles and responsibilities. Nevertheless, substantial change and reorientation of the sector to NAWAPO is ongoing at all levels from the central Ministry through to the LGAs and beneficiary communities. Institutional change is being implemented through the introduction of a transitional institutional framework. In the final institutional framework, responsibility for provision of services will be held by local government authorities, water resource management will be effected by autonomous river basin authorities, and policy and strategy development and performance monitoring will be by the central Ministry.

2.7.3 Supporting Legislation

New water resources management legislation has been drafted to provide legal authorisation for many components of the NAWAPO, including the new institutional changes. The

legislation will reinforce the powers of the basin water boards and the new central oversight structure; authorise water abstraction charges; discharge permits, water quality standards; empower the Minister to establish and set aside a ñreserveò before water allocation decisions are made, and to promote trans-boundary water resources management and collect relevant data; provide for cross-sectoral collaboration; and support the establishment of water user groups. When passed, this legislation will provide the necessary authority for institutional reorganisation, autonomous financing of basin water resources management offices, and wide participation in decision-making. Water Supply and Sanitation legislation has been drafted to ensure adequate and sustainable management and operation of water supply and sanitation services. The legislation establishes water supply and sanitation authorities and community owned water supply organisations; to enable the appointment of service providers; and to provide for the establishment of regulatory mechanisms.

Drafting and enacting legislation will be a major step forward, but it is only one step in the process. As learned in the past, the lesson will be that effective enforcement is as difficult as legislating the laws.

Thus, refining and strengthening the law will not automatically result in its being effectively enforced. Whether these sound principles are put into practice will depend on commitment by MoW, PMO-RALG, LGAs, as well as political drive, access to financial support, and expertise.

2.7.4 Decentralisation of Rural and Urban WSS

Decentralised, community-based implementation of rural WSS has been successfully implemented in 24 districts. There is strong evidence that communities are willing to contribute to the capital works programme as well as O&M if service improves and they are involved in expenditure decisions. The elements of this success have been captured in guidelines and procedures that can now be rolled out into other rural communities.

Urban water supply and sewerage services in 19 regional centres and DAWASA governed by autonomous management boards, have been improving over time since 1998. Important interventions like metering have increased efficiency in terms of controlling unaccounted-for-water and reduction of various operational costs resulting in service improvement and revenue collection. Experience gained in managing urban water supply and sewerage services currently under UWSAs will be extended to other towns in the country.

The lesson learned is that putting new policy into practice and going to full scale takes time, patience, commitment and resources. The NAWAPO calls for substantial changes in how projects are identified, approved, planned, implemented and sustained. It also calls for changes in attitudes, hierarchy, communications and management style. Change has not come easily but the process is now well underway.

2.7.5 Human Resources Capacity Development

The changes in the institutional framework for WSS and WRM have substantial implications for human resources development and capacity building in the MoW, Regional Secretariats, and LGAs, private sector, BWOs, MoW executive agencies, NGOs and communities. These include: re-orientation and training of existing personnel; recruitment, selection and training of new personnel; and planning for long-term personnel needs at an institutional and sector wide level. They affect all of those managers, decision-makers, middle-level professionals, field level technicians and community-based cadres who play a

role in the provision of water supply and sanitation services and water resources management in urban, semi-urban and rural areas.

Hence, capacity development in this case is more than simply setting up a system for training these players but most importantly it involves adopting new institutional linkages, which can ensure an effective and efficient water supply and sanitation service delivery system and water resources planning and management. It also involves creating an enabling environment for all players to be able to efficiently and effectively implement the water sector activities.

In other words, the new institutional frameworks imply a major transformation in the way different institutions currently work in the water sector. Some institutions (e.g. central government and regional administrations) have to change their roles. Others (e.g. MoW, line ministries, WSSAs, LGAs, MoW executive agencies, private sector, BWOs and the consumers/user community) have to learn new roles, and all have to learn each otherôs roles and how to work together effectively in an interdependent way.

Capacity building and training (CB&T) therefore, is an important component of this new approach and it involves developing the capacities of all players at all levels ï national, basin, regional, district, and community. It is an important component aimed at helping stakeholders deal with the changes and understand their new roles and approaches in the new system and most importantly, translating them into practice. In addition, they need to be equipped with adequate working facilities to be able to effectively undertake their new roles in implementing the water sector plan.

2.7.6 Multi-sector Nature of Water Resources Management

Several water dependent sectors are recognising the benefits from improved water resources management. This is most apparent in irrigation, the largest water-using sector, where the productivity benefits from water-user associations and improved water-use efficiency have been demonstrated in the Pangani and Rufiji basins through the River Basin Management and Smallholder Irrigation Improvement Project (RBMSIIP).
The water supply and sanitation sector is also aware of the benefits of managing the quantity and quality of water resources so that supply is more certain and treatment costs are reduced. This is particularly true of DAWASA whose surface sources are vulnerable to drought and occasional floods and whose groundwater is subject to uncontrolled exploitation.

The environment is also recognised as an important user of water, as well as a key part of the water resources base. Many recent issues have illustrated the role of the environment in water resources management, including the water-use conflicts in Usangu and consequent impacts on both the energy sector and the Great Ruaha National Park; the impact of water-quality-related problems on fisheries in Lake Victoria; and growing concerns over increasing mercury contamination from the mining sector.

While the experience of the Lower Kihansi hydropower project has sensitised the energy sector to environmental aspects of water management, and the experience of the Lower Pangani hydropower plant made the importance of engaging in water resource allocation decisions more apparent, the energy sector has yet to fully engage in a multi-sectoral approach to water resources.

The lesson learned is that although the NAWAPO, the proposed institutional structure, and legislation all promote the participation of water using sectoral agencies, the reality is that these agencies are not understanding or taking actions to internalise its requirements. They have yet to adopt a cross-sectoral, basin-wide perspective when making planning, design, and operations decisions. The water resources sectorð at the national, basin, and catchment levelsð needs to engage with counterparts in other sectors to promote their involvement in management activities. This engagement needs to be supported at the highest government levels to ensure that good water resource management is fully absorbed into the work of all water-related sectors.

2.7.7 Water Resources Monitoring

The hydrological monitoring network has improved in the Rufiji and Pangani basins under the RBMSIIP, and the monitoring network in the Ruvu/Wami basin will be improved under the DWSSP. However, many flow monitoring stations in other basins are inoperative and there are insufficient resources to allow regular reading of those that remain operational. Groundwater monitoring is only carried out in a few selected areas. Water quality sampling and analysis is also hampered through limited funding and inadequately equipped analytical laboratories. The major water sources (catchments, groundwater recharge areas, and wetlands) have not been properly delineated and are not monitored or protected. They face constant threats. The absence of systematic monitoring precludes knowledge on the severity and extent of the problem.

The lesson learned is that effective monitoring networks are key to water resources management. They need to be properly established, staffed, funded, implemented and sustained before they can provide the needed basis for water allocations, pollution control, and environmental flow maintenance. As exemplified by the experience in the RBMSIIP, targeted data gathering and research in the upper Rufiji Basin had a major impact on community attitudes and water allocations. This was achieved through the studies being commissioned by decision makers for clear purposes and the scientific findings properly communicated to them.

2.7.8 Management of Trans-boundary Water Resources

The GoT is actively engaged in promoting cooperative management and development of its international rivers, basins and lakes, as shown by its participation in the strategic action plan and inter-government convention for Lake Tanganyika, and the cooperative efforts with Kenya, Uganda, Rwanda, Burundi, Mozambique and Malawi. However, a clear strategy needs to be put in place with assigned roles and responsibilities to address the growing challenge of managing the nationôs numerous trans-boundary water resources management and development. Tanzaniaôs approach needs to become more strategic and long term as important benefits and opportunities are being lost.

The Southern Africa Development Community (SADC) Protocol on Shared Watercourses, the East African Community (EAC) Shared Vision and Strategy Framework for Lake Victoria, the Nile Basin Initiative (NBI), and the Lake Tanganyika Environmental Management Convention need now to be implemented. They will need reinforcing through continued international monitoring and dialogue and, where possible, jointly developed and shared water resources. New trans-boundary lake basin management authorities will need to be integrated with the BWOs and staffed by officers with appropriate skills in aspects of lake and catchment management. These skills are in short supply in Tanzania, and there is likely to be even greater competition for these skills as the new BWOs become operational.

Tanzaniaôs experience in its initiatives in the three African Great Lakes and joint projects in the Songwe, Mara, Kagera and Ruvuma river basins has demonstrated the overriding lesson that the best way to initiate trans-boundary water body management is through engagement from national level to local communities in all riparian nations coupled with a focus on issues affecting local livelihoods.

3. PROGRAMME OBJECTIVES AND PERFORMANCE INDICATORS

This section provides an overview of the national objectives in the water sector, a summary of the WSDP objectives and introduces performance indicators through the logical framework analysis developed for the WSDP. Reference is also made to the MIS that will form an integral part of monitoring system discussed in more detail in sub-section 9.3. The need for baseline studies and identification of specific targets for the objectively verifiable indicators is also highlighted.

3.1 Water Sector Objectives

As discussed in Section 2, Tanzaniaøs Development Vision 2025[21] aims at achieving an absence of abject poverty and attaining a high quality of life for all people by 2025. Water supply, sanitation and water resource management are incorporated prominently in the Development Vision. Access to safe water is targeted as increasing from 53% (2003) to 90% by 2025 in rural areas and sanitation coverage is targeted to increase from 50% in 2003 to 75% by 2015. Intrinsic to these overall targets, are the objectives of equity of access, water management capacity, and proper maintenance of water and sanitation systems, use of environmentally sound technologies, and effective water tariffs, billing and revenue collection mechanisms.

In the short term, MKUKUTA[22] commits Tanzania to achieving the MDGs for access to safe water, sanitation and sustainable environment goals while also setting targets for 2010. The MDGs include increasing the proportion of the rural population with access to clean and safe water from 53% in 2003 to 65% by 2010 for the rural population. It also calls for increased access to clean and safe water for the urban population to rise from 73% in 2003 to 90% by 2010.

In order to achieve MKUKUTA targets, a total of 12.6 million additional people will benefit, while for MDG targets, further 11.5 million people will benefit. In order to meet the Development Vision, a further 24.7 million will benefit from the improved water supply.

Achieving the first outcome of MKUKUTA ï growth and reduction of income poverty ï will require better management of water resources, better planning and design of new water resources infrastructure, greater investment in new infrastructure and greater equity in the distribution of these resources. The second outcome of MKUKUTA ï improved quality of life and social well-being ï will be directly supported by increased coverage of water supply and sanitation facilities and better water resources management. Finally, the third outcome ï good governance and accountability ï will require empowering local groups, encouraging participatory, transparent and accountable decision making, granting secure rights and enforceable pollution discharge permits with responsibilities to water users, water and energy utilities, community groups and local governments.

3.2 Programme Objectives

3.2.1 Overall Programme Objective

[21] United Republic of Tanzania, (1999), ñDevelopment Vision 2025 for Tanzaniaò Dar es Salaam.
[22] Vice Presidentøs Office (2005) ñNational Strategy for Growth and reduction of Povertyò (NSGRP ï MKUKUTA), Dar es Salaam, The United Republic of Tanzania.

The objective of the WSDP is to alleviate poverty through improvements in the governance of water resources management and the sustainable delivery of water supply and sanitation services.

3.2.2 Water Resources Management

The overall objectives for WRM in the WSDP[23] are to:

- develop a sound water resources management and development framework in all nine water basins, for optimising the utilisation of the water resources in a sustainable manner for the various competing uses;
- promote good governance of water resources through empowering water users, encouraging participatory and transparent decision-making, devolving ownership to the user level, and granting secure water rights with responsibilities to the water users, community groups, local government and basin boards; and
- strengthen the capacity of basin offices to address trans-boundary water resources issues.

Specific objectives of the WRM strategy include:

- strengthen BWOs with staffing, training, offices and equipment;
- realign policy, legal and administrative reforms in water-related sectors with those in the water resources area;
- registering and licensing of water use activities and polluting enterprises in accordance with NAWAPO; and strengthening of enforcement capabilities so that water use permit conditions are enforced, resulting in water being shared equitably and with minimum loss, and pollution permit conditions monitored so that water quality is not compromised;
- develop and implement a comprehensive water quality monitoring and pollution control programme, permanent water quality standards, and protection of important water sources;
- promote and strengthen education curricula in national institutions with regard to water management challenges;
- assessment of the water resources and preparation of IWRM plans, mitigation against floods and droughts; and implement priority water resources infrastructure investments;
- establish and strengthen water quality laboratories and provide mobile water quality laboratories;
- ensure the active and effective participation of both women and men in WRM; and
- promote prevention and mitigation of HIV/AIDS.

Incentives for continued BWO reforms will be designed towards adoption of more commercial approaches in managing the BWOs. Such incentives shall include increased powers of autonomy, setting salary levels, recruitment, etc. based on cost recovery performance.

3.2.3 Rural Water Supply and Sanitation

The general objective of the WSDP with regard to rural water supply and sanitation is improved quality and quantity of drinking water and sanitation services for rural Tanzanians

[23] MoW (2006) "Water Resources Management Programme", Dar es Salaam, February 2006.

sustained through improved district-level capacity, effective local water committees, private sector participation and good health/hygiene/sanitation practices.

The RWSSP includes both rural and all small town populations. By 2015, it will increase coverage of these populations to 79% from 54% in 2005. In doing so, it will meet the MDGs for the rural areas. Likewise it will increase coverage levels to 90% by 2025 in accordance with Vision 2025 goals. In all, it will provide services to an additional 33.8 million people by 2025.

The RWSSP objective is to provide water supply and sanitation services that are sustainable and equitable. As such, a significant proportion of the planned investment is allocated to planning support, stakeholder consultation, the establishment of DWSTs, support to the private sector, general capacity building, and other key areas.

The NRWSS programme objectives addresses the following:

a) ***Institutional Framework:*** Establish an institutional framework for rural water supply and sanitation services, which will enable effective and efficient provision of these services, and which will clearly identify the roles and responsibilities of the relevant organisations and stakeholders at the national, local, and water user group levels. The framework will provide for effective and independent monitoring and regulation of the activities of organisations directly responsible for service provision. With the role of government, through MoW, changing to that of co-ordination, policy formulation, guideline formulation, and regulation, current responsibilities for the provision of RWS services will in due course need to be transferred to successor organisations.

b) ***Demand for Water Supply Facilities*****:** Provide water supply facilities that are sustainable, increase coverage and meet the demands of an increasing population, based on prioritised development plans that take into account the individual and economic requirements of consumers.

c) ***Demand for Sanitation Services:*** Develop sustainable and cost effective sanitation facilities to increase coverage and meet the demands of an increasing population, through the promotion of the benefits of the use of safe methods of excreta disposal, and of the use of appropriate alternative technologies.

d) ***Service Levels:*** Ensure that RWSS facilities are cost effective and efficient, meet minimum specified levels of service commensurate with protection of public health, and take into account the ability to pay for the facilities, and equity considerations.

e) ***Water and Sanitation for Poverty Alleviation:*** Improve RWSS services to help alleviate poverty, as a result of mobilised resources directed at priority areas, and mobilised human and material resources within the user-community itself.

f) ***Services to Low-Income Groups:*** Improve WSS services for low-income groups, particularly in small towns, by identifying those groups and ensuring that service providers include them in all future projects and sub-projects, and by ensuring that necessary subsidies are either built into the tariff system or met by the Government.

g) ***Community Ownership and Management:*** Transfer the ownership and management of rural water supply facilities to the user-communities, by raising community awareness of their related responsibilities, preparing guidelines for establishing

community-owned organisations, establishing procedures and legislation for transferring ownership to the user-communities, establishing technical and managerial support mechanisms, determining and prioritising the capital investment requirements for rehabilitating or providing facilities, locating sources of funding, and implementing a phased programme of transfer of facilities to user-community ownership.

h) ***Integration of Water Supply, Sanitation and Hygiene Promotion:*** Contribute to the improvement and protection of the health and living conditions of people by promoting community behaviour change and improved sanitation facilities, and by developing and encouraging the use of household water treatment and storage options.

i) ***Appropriate Technology:*** Provide WSS facilities based on technologies that are best suited to the technical, social and economic circumstances of each facility including household based facilities. Alternative technologies will be identified during the planning process, and evaluated in terms of service levels, cost to consumers, and overall sustainability. The user-community will participate in the planning and selection process.

j) ***Rehabilitation:*** Rehabilitate existing facilities back to their original design capacities, where feasible, and support the rehabilitation with adequate provision for future operations and maintenance by service providers so as to reduce future degradation of infrastructure.

k) ***Investment Requirements:*** Target investment in RWSS services so as to provide certain minimum levels of service at maximum rates of coverage.

l) ***Private Sector Participation:*** Improve service delivery levels and cost-effectiveness through support to private sector participation in the provision of RWSS services in situations where it is beneficial to do so.

m) ***Legislation:*** Develop and put in place a strong and effective legal and regulatory framework for the sustainable provision of RWSS services and ownership of facilities and infrastructure, including user-communities becoming the owners of their water supply facilities.

n) ***Planning Mechanisms:*** Develop and put in place a holistic and integrated planning structure for water supply and water-related sanitation services that use a bottom-up SWAP. The preparation of plans for districts based on ward and village or user-community needs will be necessary.

o) ***Financing Mechanisms:*** Establish and implement a sub-sector capital investment SWAP that is accepted by both the Government and ESAs.

p) ***Recurrent Costs:*** Develop and put in place effective and transparent mechanisms for covering recurrent costs, based on defined performance standards which take levels of service and ability to pay into account, supported by targeted subsidies in case of need.

q) ***Tariff Structures:*** Establish tariff levels and structures which are transparent, achieve cost coverage targets, encourage cost effective provision of services, and protect poor and disadvantaged groups.

r) ***Performance Monitoring:*** Put into operation an effective performance monitoring system for all providers of WSS services. The computerised system will involve all key stakeholders in the monitoring and evaluation process.

s) ***Regulation:*** Put in place effective regulatory mechanisms to protect the interests of water consumers and the users of sanitation facilities, and to ensure value-for-money for the provision of services. The regulatory mechanisms will require development of the MoW capacity to regulate COWSOs, and the introduction of measures to ensure compliance with regulatory requirements.

t) ***Capacity Development and Training:*** Ensure that human resources within the sub-sector possess the appropriate knowledge and skills to enable them to carry out their tasks, and are adequately motivated through remuneration, incentive structures, and opportunities for advancement.

u) ***Stakeholder Participation:*** Improve service delivery and sustainability of facilities through the effective involvement of stakeholders, and of primary stakeholders in particular, and through accountability to them. Appropriate mechanisms will be developed for that purpose, and primary stakeholders will be made aware of their new participatory roles and responsibilities.

v) ***Gender Equity:*** Ensure the active and effective participation of both women and men in the provision of RWSS services. The active participation of women in RWSS affairs will be promoted.

w) ***HIV/AIDS:*** Promote prevention and mitigation of HIV/AIDS.

3.2.4 Urban Water Supply and Sanitation

The general objective of the WSDP with regard to urban water and sanitation is improved and sustained quality and quantity of drinking water and sewerage service for urban Tanzanians managed by improved, financially autonomous and commercially viable UWSAs/WSSAs providing efficient and cost-effective services.

The specific targets of the UWSSP include raising water supply service coverage from 74% (2005) to 90% in 2010 and 95% by 2015 to meet the MDGs and 100% for Vision 2025. The target for sewerage coverage is to increase 17% (2003) to 30% by 2010.

The strategy[24] for achieving these goals in the urban sector is to develop the existing UWSAs into bodies that are financially autonomous and commercially viable. In essence, the focus of the strategy is the commercialisation of the urban water authorities so that they are capable of efficient and cost-effective provision of services. Commercialisation is seen as the next step forward in preparing the UWSA/WSSAs into future corporates to gain public company status. Incentives for continued reforms will be designed towards adoption of more commercial approaches in managing the UWSAs/WSSAs.

[24] MoW (2006) ñNational Urban Water Supply and Sewerage Strategic Programme ï Strategy Report, Vol. 1ò, Dar es Salaam.

The broad objectives of UWSS are to:

- provide a water service connection to any person or organisation that requests one;
- provide continuous potable water quality 24 hours per day to at least 95% of customers;
- have UWSA/WSSAs be responsible for operating and maintaining their works including replacement of worn out equipment, using revenues from the sale of water and sewerage services;
- have UWSA/WSSAs finance a significant part of their new investments in water supply systems from loans; and
- have sewerage systems as part of an overall sanitation strategy for each town.

Specific objectives include:

- setting appropriate tariffs;
- effectively managing consumer demand;
- establishing good customer relations;
- controlling unaccounted-for-water (UfW);
- operating and maintaining the systems efficiently while minimising operating costs;
- making provision for poor consumers, establishing standards for industrial wastewater discharges to sewers;
- where a sewerage system is provided, wastewater collected should be treated and disposed of in accordance with Tanzanian standards;
- institute ideal billing systems in 10 UWSAs;
- ensure the active and effective participation of both women and men in UWSS; and
- promote prevention and mitigation of HIV/AIDS.

3.2.5 Objectives of the Executive Agencies

The Water Sector Development Programme consolidates the three components including strengthening of the general administration of MoW; Drilling and Dam Construction Agency (DDCA) and the proposed Water Resources Institute (WRI) and Maji Central Stores (MCS) Agencies using a Sector Wide Approach to Planning (SWAP).

The general objective of WSDP for the executive agencies is to strengthen their ability to support implementation of the programme as well as achieve financial autonomy and commercial viability. Improved financial and commercial performance of the agencies will attract financial resources for their development from non-government sources and relieve the Government from financing their operations.

The MoW will monitor performance of the agencies to determine progress and efficiency towards achieving the goal. Incentives for agency reforms will be designed towards adoption of more commercial approaches in managing the agency. Such incentives shall include increased powers of autonomy, setting salary levels, recruitment, etc. based on cost recovery performance.

Drilling and Dam Construction Agency

The strategy for achieving goals for the DDCA is to strengthen the existing capacity by provision of new drilling and earth moving equipment. The agency will also strive to deliver its services at affordable prices to complement the private sector contribution in the water and sanitation sector. The objective for the DDCA is to become financially autonomous by 2010. The agency will operate and maintain the equipment and facilities while minimising

operating costs. Also, is required to abide by industrial standards, guidelines and ethics as laid down by MoW, National Construction Council, Contractors Registration Board and other professional bodies.

Water Resources Institute

The strategy for achieving goals for the WRI is to strengthen the Institute curricula to meet the sector personnel requirement and rehabilitation of existing and construction of new buildings, competitive recruitment, training of staff, provision of transport, laboratory equipment, geophysical equipment and workshop equipment. The objective for the Water Resources Institute is to become 50% financially autonomous by 2010 and reach 100% financial autonomy by 2015.

The WRI is responsible for setting training modules based on customer needs; setting competitive training fees; effectively managing consumer demand; establishing good customer relations; and abiding by industrial standards, guidelines and ethics as laid down by MoW, MEVT, NACTE and other professional bodies.

Maji Central Stores

The strategy for achieving its goals is to increase consumer awareness of its services, offer goods at competitive prices and train its employees on marketing and related services to compliment services offered by the private sector. The store will support implementation of the programme, through supply of water chemicals, pumps, pipes and fittings. The objective for the Maji Central Stores is to become 100% financially autonomous by 2010.

3.3 Logical Framework and Performance Indicators

The Logical Framework Analysis (LFA) for the WSDP is provided in Annex A as individual LFAs for RWSSP, UWSSP and WRM components of the WSDP as well as strengthening of MoW and executive agencies. The LFAs provide the objectives, the goal, outcome and output levels. The objectives are vertically linked to:

- Management/Operations Support;
- Capital Investments; and
- Capacity Building.

Monitoring information systems, as described in subsection 9.3, will be used to monitor performance against objectively verifiable indicators.

Baseline studies will be carried out to identify existing conditions associated with each of the indicators. Numeric targets for each of the indicators will then be agreed upon. Some indicators and associated targets will be associated with macro-level achievements, such as the number of subprojects implemented for rural communities, whereas others, such as targets for revenue and financial indicators for the UWSA/WSSAs, will need to be determined for each of the individual subprojects in specific urban centres, rural communities or towns.

4. PROGRAMME COMPONENTS

The Water Sector Development Programme is designed under SWAP to address shortfalls in urban and rural water supply infrastructure, to improve water resource management primarily through strengthening the countryôs nine Basin Water Offices, as well as sector institutions and their capacities.

It comprises of three main components: (1) water resources management; (2) rural water supply and sanitation, and (3) urban water supply and sewerage. Rural settings of the towns, municipalities and cities as well as small towns, have been included in the RWSS component. Separate details pertaining to each and every small town are contained in a separate chapter for easy identification for interventions during programme implementation. However, activities of district headquarters and small towns will be implemented under UWSS.

The programme will also strengthen cross-cutting and management activities of the Ministry as well as executive agencies (Drilling and Dam Construction, Water Resources Institute and Maji Central Stores). Although execution of the programme generally will be done at the LGA, UWSA, BWO, and agency levels, MoW will have the overall responsibility for implementation and monitoring. Coordination and collaboration will be through the Joint Water Sector Review that brings together key government and non-government stakeholders and ESAs.

A set of Operational Guidelines and Manuals as shown in Annex F, have been prepared on a sub-sector basis to guide the implementation process of sub-sector specific issues. The guidelines, which include financial disbursements and feedback mechanism, will also be used for monitoring of programme implementation.

WSDP Priority Areas for Intervention

The Water Sector Development Strategy outlines MKUKUTA strategies on water resources management, water supply and sanitation, as follows:

(i) increase sustainable access to inexpensive and reliable sources of water in both rural and urban areas;
(ii) ensure access and affordability of safe water, especially in rural areas focusing on vulnerable households, including older people headed household;
(iii) increase access to reliable water as an input for economic production with the aim of increasing the contribution of water in the GDP, and ensure sustainable management of water catchments areas and maintenance of forest cover in critical highland catchments;
(iv) ensure improved access to reliable water supplies through promotion of small-scale rainwater harvesting;
(v) promote rainwater harvesting incorporating small, medium and strategic large-scale dams and reservoirs; and
(vi) improved land management and adoption of water conservation technologies, and implementation of national plans to halt desertification and land degradation, and restore degraded lands.

In order to achieve the Water Sector Development Programme objectives, resource allocation and expenditure during programme implementation will focus on the following priority areas:

(i) rehabilitation of malfunctioning water supply systems including pumping facilities, treatments plants, distribution mains and networks in both rural and urban areas;
(ii) expansions of existing water supply systems in both rural and urban areas;
(iii) construction of new water supplies schemes to bring services to areas not covered by existing water supply systems in both rural and urban areas including peri-urban areas;
(iv) development, extension and upgrading of urban sewerage facilities;
(v) rehabilitation and expansion of hydrological, hydro geological and hydro meteorological networks;
(vi) exploration of underground water in the thrust of finding new water sources, especially in dry areas to ease drilling of boreholes;
(vii) catchment restoration and conservation of water sources from pollution and close monitoring of water quality;
(viii) promotion and construction of rainwater harvesting incorporating small, medium and strategic large-scale dams and reservoirs;
(ix) promotion of improved latrine facilities in rural areas as well as awareness creation on hygiene; and
(x) capacity building, training and strengthening of BWOs, LGAs, UWSAs, executive agencies, and at national level to carry out their mandated responsibilities.

4.1 Water Resources Management Component

The WRM programme comprises three sub-components:

- National Water Resources Reforms and Investments;
- Basin-Level Water Resources Reforms and Investments; and
- National Cross-Sectoral Investment Programme.

4.1.1 Implementation Arrangements

The Ministry responsible for water will have overall responsibility for implementation of the programme. Day-to-day leadership and decision-making would lie with Director of Water Resources. The institutional framework and the new Water Act provides for a National Water Board and Basin Water Boards, both of which are made up of stakeholder representatives of the water-related sector institutions, water users, private sector, NGOs, and women groups. Implementation will, therefore, be done with the active participation of all stakeholders.

National Level

The MoW will manage implementation of national and cross-sectoral components of the programme in collaboration with appropriate institutions. It will also prepare guidelines, and provide backstopping to basins. MoW will consolidate the basin, national and cross-sectoral components of the programme for submission to NWB.

The role of the National Water Board will be to review and approve Annual Work Plans for the whole programme. It will meet at least twice in a year to review progress reports, resolve any cross-sectoral problems associated with programme implementation, sanction any major initiatives under the programme including budgets, implementation mechanisms, and procurement for materials, civil works and consultants, give policy direction and advise

the Minister on appeals. Implementation of the programme within the Ministry structure implies only a deepening, not broadening. Thus, no special management units would be created to implement the programme. Rather, the MoW and the BWOs would be strengthened with technical assistance in Lake and River Basin Management, and in Water Resources Information Management. Overall technical coordination of the programme would be required to support the water resources division of MoW and the BWOs to properly address cross-sectoral perspectives, environmental concerns, and stakeholder participation, and to fully incorporate the complexities of the Integrated Water Resource Management (IWRM).

Basin Level

Basin Water Boards (BWBs) would have overall responsibility for the implementation of the programme at the basin level according to the National policy and guidelines ï approve annual plans and budgets, receive progress reports, and give general guidance to Basin Water Officers. The Boards would meet on quarterly basis, or as needed, to approve Basin Annual Work Plans and receive progress reports prepared by Basin Water Officers for submission to the Ministry. The Boards would also monitor implementation of the plans and resolve cross-sectoral conflicts at the basin level.

4.1.2 Basin-Level Water Resource Reforms and Investments

The basin-level sub-component is the most extensive component of the WRM programme, making up 85% of the resource requirement. Its main focus is the establishment and strengthening of the nine BWOs, which are the responsible institutions for managing Tanzaniaôs surface and ground waters in each basin. Catchment, Sub-catchment Water Committees and Water Use Associations are related institutions to be established under the BWO and BWB, as appropriate. The responsibilities of the BWO include allocation of water (surface and ground), monitoring use, enforcement of condition of the water rights, and resolution of water use conflicts; and monitoring water quality, granting [wastewater] discharge permits, and enforcement of pollution control regulations. In addition, the BWOs are also responsible for the protection of important water sources - rivers, lakes, wetlands and aquifers which are cross-sectoral in nature, and thus are linked with responsibilities of other agencies. Thus, BWOs are expected to establish operational links with other sectors at different levels. Finally, BWOs will provide the platform for facilitating, coordinating and guiding the development of water resources for multi-sectoral uses in a rationale, and economically, environmentally and socially responsible manner. The overall objective of this subcomponent will be to establish an operationally effective, transparent, accountable, and financially sustainable water resources regulatory capacity at the basin level.

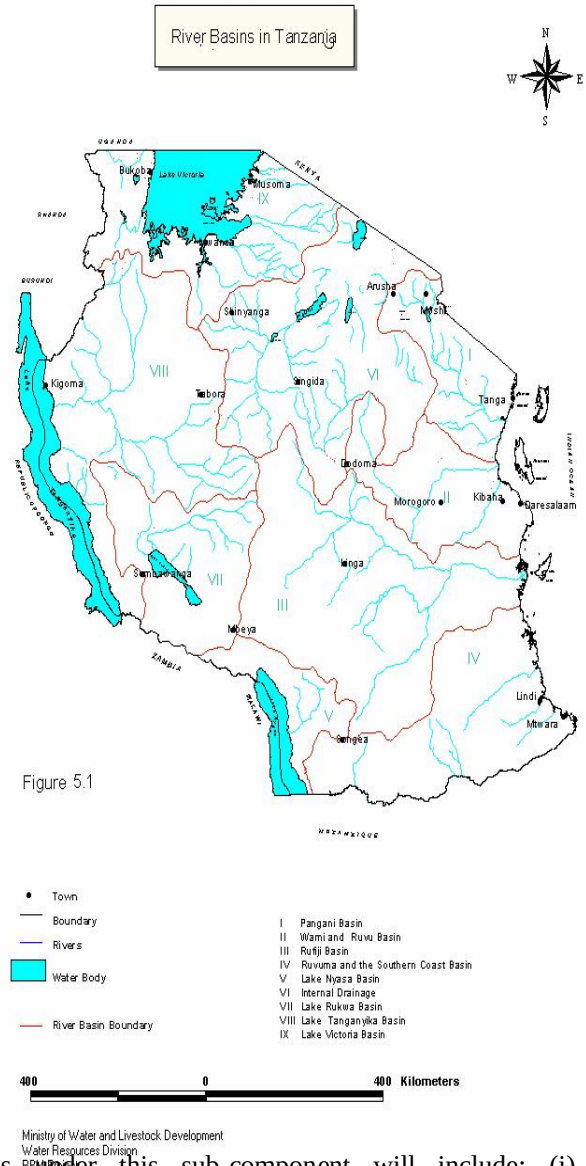
Establishing and Strengthening Basin Water Offices

Basin Water Offices and boards have been established in all nine basins (see Figure 4.1). The year each became operational is specified below:

1. Pangani River Basin ï Basin Office and Board 1991.
2. Wami/Ruvu River Basin ï Basin Office and Board 2002.
3. Rufiji River Basin ï Basin Office and Board 1993.
4. Ruvuma River and the Southern Coast Basin Office 2004.
5. Lake Nyasa Basin - Basin Office and Board 2002.
6. Internal Drainage Basin (Lake Eyasi, Manyara, Natron and Bubu Complex) - Basin Office and Board 2004.
7. Lake Rukwa Basin ï Basin Office 2003, Board 2004.

8. Lake Tanganyika Basin ï Basin Office 2004, Board 2005.
9. Lake Victoria Basin ï Basin Office and Board 2000.

Figure 4.1: River Basins in Tanzania



The interventions under this sub-component will include: (i) renovating and construction of buildings for new BWOs and field offices, expansions for existing BWOs and field offices, (ii) provision of office furniture, communications equipment, computers, and vehicles, (iii) upgrading and replacement of equipment for hydrological, hydrogeological, climatic and water quality data collection and monitoring stations, (iv) strengthening roles and functions of the BWO, Basin Water Boards, Catchment and Sub-Catchment Water Committees, and Water User Associations, and participatory

basin management, (v) a study on financing options for water resources management, and (vi) training for strengthening BWOs in business planning, administration and financial management.

Renovating and construction of Office buildings: This involves some new construction (only where such need is warranted and demonstrated) and renovations of BWOs and selected field offices.

Vehicles and equipment: The nine BWOs also need additional vehicles, furniture, computers, and communications and specialised technical equipment, to be effective in discharging their responsibilities. This will involve upgrading and replacement of equipment for hydrological, hydrogeological, climatic and water quality data collection and monitoring.

Strengthening roles and functions of BWOs, BWB and User Groups: The Basin Water Offices, Basin Boards, Catchment and Sub-catchment Water Committees, as appropriate and Water User Groups will be strengthened through a series of structured, well designed and targeted training programme to enable them become more proactive and responsible water managers and water users and o engage in partnership and dialogue processes. The programme would also provide the required essential equipment and technical assistance for basin management.

A study of financing options for water resources management: Under this activity, a detailed study, building on previous studies and experiences, would be carried out to review and recommend the use and operational application of the various user charges and levies to finance water resources management expenses. During the preparation of the basin plans, basin specific water user charges (fees and levies, others) and structures will be detailed.

Financing for water resources management is the most challenging aspect of successful basin management. Even if other aspects of good governance are in place, if sustainable financing is not available, it is difficult for institutions to function effectively and for good management to ultimately develop. Existing water user fees, including TANESCO royalties, will not be sufficient to cover the costs of management, and external funds are not sustainable. In the short-term, BWO revenues are, however, expected to increase when all water users are registered, water use is more carefully monitored, tariffs more accurately reflect use-values, collection rates improve, and annual budgets and expenditures better relate to actual needs. Retaining water user fees is an incentive to collect more revenue from fees, and explains the improvement in granting water rights and collecting water user fees. This is part of a move towards greater decentralisation and financial autonomy of water resources management within a common national framework.

In the longer term, willingnessï to-pay economic water user fees should also improve as institutions at the basin level (WUAs, Catchment and Basin level forums) increase in number and gradually become more informed about the need for astute water allocation and management in the basin. Under the WSDP, a detailed study, building on previous studies will be carried out during the first year of WSDP. It will recommend the use of the different combinations of user fees, charges and levies for each of the 9 basins based on the basinôs particular combination and types of users. In cases where user fees, charges and levies prove to be inadequate, recommendations will be made to ensure that the appropriate level of budget support as specific line items is in place. During the preparation of the basin plans, basin specific water user charges (fees and levies and others) structures will be detailed.

Training in business planning, administration, and financial management: BWOs are expected to operate as financially and technically autonomous bodies. In the short-term, BWO revenues are expected to increase when all water users are registered, water use is more carefully monitored, water user charges (and other fees and levies) more accurately reflect use-values, collection rates improve, and annual budgets and expenditures better relate to actual needs. BWOs are also expected to operate as effective administrative bodies that operate in a business like manner. To support this transition, the MOW will organise training for the BWOs in business planning, administration and financial management, and strengthen billing and fee collection, accounting systems, and management skills.

Water Resources Monitoring, Assessment, and Enforcement

Timely, appropriate and accurate information on knowledge of water availability and use is a fundamental pre-requisite for proper water resources planning, design, operational and management decision making. To effectively implement NAWAPO, it is necessary to have a sound and well functioning hydrological, climate, hydrogeological and water quality information collection system in place. Presently, the existing hydrological, climate, hydrogeological and water quality information base is in poor condition or non existent in many parts of most of the basins. Operation and maintenance of the networks has been poor due to inadequate funding. Hydrometric networks in Pangani and Rufiji have benefited from RBMSIIP. The Wami/Ruvu Basin is in the process of upgrading its information system under the Dar es Salaam Water Supply and Sanitation Project.

The Basin Water Offices have shown the need to develop an information management system that comprises and links: (i) a database management system (DBMS); (ii) tools for information products; and (iii) a geographical information system (GIS) database. The programme provides financing for the development of such systems. The new Water Resources legislation provides legal authorisation for NAWAPO components, including the institutional changes. This legislation provides the necessary authority for institutional reorganization, autonomous financing of BWOs, and broadening wide participation in decision making.

This subcomponent, therefore, will comprise the following activities: (i) water resource monitoring systems, (ii) operation and maintenance of stations, (iii) assessment of water resources, (iv) strengthening enforcement of legislation.

Water resource monitoring systems: Design and establishment of optimal and cost effective information management systems (including hydro-meteorological; hydrogeological, water quality and sediment) to provide an effective water resources information base for planning, design, operations and management to support policy implementation. It will also review and update existing water resources assessment procedures as well as methods, procedures and protocols for enforcing compliance.

Operation and maintenance of stations: Provide initial funds for operation and maintenance of the stations while the financial capacity of the Basin Offices is being built, with a clear time frame for implementation. The intervention will also include re-rating of the rating curves, rehabilitation and recalibration of station and operational instruments.

Assessment of water resources: This activity will be provided at two levels. BWO would be supported to carry out a preliminary assessment of its water resources. More detailed support that will build on this preliminary assessment will be for preparing integrated lake and river basin management plans.

Strengthen enforcement. This intervention entails implementing the following activities:

(a) ***Review and register water uses*****:** to identify, determine and register all water users and abstraction rates, based on socio-economic and environmental considerations and criteria to be established by respective Basin Water Boards, to assist in apportioning water and billing users;

(b) ***Issuing of water use permits:*** to conduct a special registration process for all those who do not possess legal rights to water;

(c) ***Regulate and control water well drillers*****:** ensure full registration of water drillers to stop uncontrolled drilling and follow up monitoring to protect aquifers;

(d) ***Monitoring for compliance:*** regular monitoring for enforcing provisions of water rights and effluent discharge standards;

(e) ***Conflict resolution:*** training in conflict resolution and negotiation skills to the BWOs to empower them to address the various types and scales of water use conflicts between and among sectoral users of water.

Water Quality Management and Pollution Control

Water quality focuses on a wide range of water uses including water supply for drinking, industry and irrigation, fisheries, navigation, recreation and conservation of biodiversity. However, various human activities taking place in the basins threaten the fresh water bodies with increasing pollution and degradation. Pollution from point sources and non point, or diffuse sources is now recognized to be a serious and growing problem. Pollution undermines the use of an important, and in some cases, an increasingly, scarce resource. Pollution also transfers the consequences (or cost of treatment) to downstream users, and can render large quantities of water unsuitable for use, or which can be used for restricted purposes only. The Water Utilisation Act, Amendment 1981 has set standards for receiving waters, which have not been fully implemented. The monitoring and management of water quality and control of pollution is not carried out on a systematic basis for most of the basins, and pollution control capacity is weak.

There is water quality laboratory infrastructure in the country, namely, the Central Water Laboratory located at Maji-Ubungo, 15 Maji regional laboratories located nation-wide, which are under the Central Water Lab Unit, the Government Chemist, TPRI and others. With the increasing need for ambient water quality monitoring and pollution control to safeguard the water resources, there is a need to strengthen these labs depending on the anticipated water quality monitoring programme for the respective basins. This subcomponent will comprise interventions as follows:

Water quality management and pollution control strategy: Development of a coherent water quality management and pollution control strategy in two phases. Phase 1 will define the specific water quality issues and pollution control challenges in each basin, review the physical infrastructure and the human capacity, and understanding institutional factors (relationship between the Maji-labs, BWOs and other agencies). Phase 2 would involve development and implementation of basin-specific water quality management strategies under the respective integrated river and lake basin plans.

River condition classification system. Establish a river condition classification system that will measure the health of river systems to provide for a systematic way for determining and tracking changes in water quality and degradation of water conditions.

Permanent water quality standards. Criteria for determining pollution levels will be developed jointly between the Division of Water Resources and the Basin Water Offices, Division of Environment, and Water Quality Laboratory. This will facilitate the establishment of permanent water quality standards for different types of receiving waters so that there is a benchmark against which the water quality monitoring data can be assessed. This will help in establishing a viable pollution enforcement system.

Water quality laboratories. This will involve an inventory and status of the Maji laboratory buildings, laboratory equipment, chemicals, sampling procedures and methods, quality control processes, the work load associated with each laboratory, review of financing aspects, and determining optimal investments needs. The target is to have fully functional laboratories including accreditation of Maji Ubungo Central laboratory.

Improving enforcement and compliance. This would address three important areas: (i) specific recommendations for strengthening the linkages between the various institutions (regional laboratories, BWOs, environmental agencies, and the water supply sub-sectors) to improve quality control of the laboratory results; (ii) optimal and cost effective processes

and optimal equipment needs to ensure financial sustainability of laboratory operations; and (iii) relevant training for strengthening regulation and control of pollution.

Protection of Important Water Sources

The proposed investment programme builds on the National Conservation Strategy for Sustainable Development[25]. It aims to support the development of land use regulations and land protection measures by the Departments responsible for lands, forestry and agriculture, and environment, and District Councils so that important water sources are better protected, and soil and nutrient losses from deforestation and poor agricultural practices are minimised. This will include the following interventions: (i) studies to identify vulnerable and threatened water sources; (ii) delineation of important surface and groundwater sources (including watersheds, wetlands and groundwater recharge areas); (iii) work with the relevant Government Agencies to institute legally binding protection for National Parks or Game Reserves and strict zoning requirements; (iv) support resettlement programmes; and (v) monitor environmental quality. It is also intended to develop coordination mechanisms for these measures across the concerned Government departments and agencies, and to develop programmes for controlling non-point sources of pollution.

Water Demand Management

An overarching challenge faced by most water basins is the heavy pressure on water resources due to the high demand for a variety of uses. Water demand management is essential if surface and ground water resources are to be sustained and available on a more equitable basis. Several activities will be undertaken to improve demand management as follows:

- *Promote water demand management:* public education and awareness campaigns as part of the communications strategy to improve understanding about water use, options available to improve water use as well as the social, economic, environmental and regulatory implications of over-use**;**
- *Management of upstream water use*: implementing programmes to control and regulate upstream water uses of major infrastructure investments, especially during the critical dry periods in selected basins facing chronic water conflicts (e.g., Pangani and Rufiji);
- *Set tariffs and measure flows:* determining the economic value of water for different uses, as well as the economic cost of water resources degradation in order to facilitate a more economic allocation of water and promote protection and conservation of water resources;
- *Manage groundwater demand:* better management of ground water resources by determining safe yields of aquifers, facilitating groundwater recharge and promoting groundwater use based on aquifer characteristics; and managing and controlling groundwater exploration and drilling activities.
- *Manage river flows:* in heavily overused rivers, undertake site-specific studies to assess perceived or anticipated river flow problems, identify possible solutions and implement the recommendations.

[25] National Conservation Strategy for Sustainable Development, NEMC, 1994.

Integrated River and Lake Basin Plans

Over the past decade, Tanzania has adopted the concept of integrated water resources management and development, which is still evolving. The concept is, however, in its infancy and not uniformly or fully understood by many water using sectors, institutions and individuals. It is proposed to prepare Integrated River Basin Management Plans (IRBMPs), on a phased basis, starting with Pangani and Rufiji basins, which are at an advanced stage having more updated data and information, but also characterised with the highest level of water use and conflicts. These plans would support the attainment of MKUKUTA and MDGs, and provide a blue print for rationally managing and developing the nationôs water resources for multi-sectoral needs in an economically efficient, socially acceptable and environmentally sustainable manner. The plans would form a key tool for managing each river and lake basins in a rational manner. The preparation of each plan would be guided by the NWB and supervised by the respective BWB. The development options to be considered would include a range of options from single and multi-purpose storage dams, inter-basin transfer schemes, conjunctive use of surface and groundwater, desalination, and demand management, rainwater harvesting systems and sand dams based on criteria for selection of option.

Priority Water Resources Infrastructure Investment

Priority investments to be considered may include the following: (i) design and drilling of additional deep boreholes to augment Dar es salaam water supply (if the current test drilling programme yields positive results) and conducting detailed studies, design and construction of Kidunda Dam; (ii) study and design of dams in the Rufiji Basin to augment water supplies for the Ruaha National Park, rehabilitation/desilting of various dams in the Internal Drainage Basin and protection of their catchments; (iii) detailed design of the Songwe River Management programme; (iv) design and construction of intakes, gates and control structures for planned irrigation schemes under the Agricultural Sector Development Programme (ASDP); (v) urban and rural water supplies under the Water Sector Development Programme; and (vi) plans for developing industrial supplies under the Vision 2025 programme. The NWB will establish a clear set of criteria to be used to identify and select the priority investments to be funded.

Mitigating Water Insecurity

In the dry areas of the country, rains are erratic and unreliable, and most rivers are ephemeral or intermittent. This means that depending on run-off, river flows for sustainable supplies is a serious limitation for full exploitation of the existing socio-economic development potentials in the rural and urban domestic water supplies, livestock, irrigated agriculture, environmental uses, hydropower production, industrial production, wildlife and tourism, and mining operations, which are essential for attaining MKUKUTA, MDGs and Vision 2025 targets as well as promoting sustainable livelihoods to the majority of the people. Water insecurity is also compounded by inadequate water storage infrastructures to buffer against the associated impacts.

The option for dams to offset these impacts is not new to Tanzania. There are over 710 existing dams of varying sizes built in the period between 1926 and 2005 to meet water requirements of different uses. The status of the dams in terms of their remaining useful capacities (due to many years of sedimentation) as well as the safety of the structures is yet to be determined. Some of these dams need rehabilitation. There is, however, great potential for development of new storage dams for regulation of river flows to increase dry season flows for multi-objective uses and to offset impacts of high climate variability. This potential provides immense opportunity for Tanzania to achieve MKUKUTA, MDGs and

Vision 2025 targets. Immediate potential dam sites, by basin, for mitigating water insecurity, are indicated in Annex D.

The planned intervention under the WSDP include: (i) evaluation of status and rehabilitation or expansion of existing dams/reservoir; (ii) surveys, feasibility studies and detail design of new dams; and (iii) construction of new dams. It is planned to construct approximately, 52 small-size dams, 13 medium-size dams and nine large-size dams under the WSDP over the period of 2006-2025. Detailed studies, designs, and Environmental Impact Assessment, will be conducted to guide implementation.

4.1.3 National Water Resources Reforms and Investments

Human Resources Development

The core to successful water resources management lies on building the knowledge base and skills at the national, basin and local level to utilise the relatively new approaches and multi-disciplinary tools of integrated water resources management. Specialist skills will be required to implement the various scientific and technical functions, both at the national and basin levels and also in the districts. A large number of hydrologists, hydrogeologists and technicians (FTC and diploma holders) presently working within the MoW will retire soon. At the national level, where the role of the Government is to focus on policy making, regulation, sector planning, monitoring and evaluation, and co-ordination, senior specialists are required, as well as young professionals who can eventually take over the roles of senior staff. Human capacity strengthening would focus on capacity needs based on new approaches to water resources management, which emphasize the integration of sectors, participation, comprehensiveness, and subsidiarity, and which treats water as both a social and economic good. In light of this, the proposed HRD plan aims at enabling the MoW, basin organisations, and sectoral agencies to carry out their roles and responsibilities under the new organisational framework, and the implementation of the NWSDS.

Operational Support to MoW

With increased awareness of water resources issues (scarcity, seasonal variations, competition and conflicts, and quality), and the demands of the new policy and legal frameworks for IWRM, this sub-component aims at strengthening all sections and units in the Division.

The strengthening would include: (i) recruitment of skilled manpower to fill the gaps in all essential fields; (ii) training of existing staff on IWRM for the national and basin staff, and all other water related institutions; (iii) provision of essential and specialised equipment, including vehicles and computing equipment; (iv) rehabilitation of the current meter calibration tank so as to obtain reliable flow data; (v) infrastructure development, and provision of office equipment and vehicles; (vi) development of strategic operational tools such as technical standards, guidelines and manuals and a national water atlas; (vii) strengthening and standardisation of Information Systems (data collection networks, data collection; processing, analysis, and storage, and quality control); (viii) creation of a national water resources information centre (ix) development of a national river/water classification system; and (x) development of an effective programme for controlling point and non-point sources of pollution.

Transboundary Water Resources Management

Tanzania shares eleven international water bodies with other riparian nations, namely, the three Great African Lakes (Victoria, Tanganyika and Nyasa), Lakes Chala and Jipe, and the Rivers Kagera, Mara, Pangani, Umba, Ruvuma and Songwe. Each of them exhibit unique characteristics and a complex range of management problems, which include: environmental management; river basin development for hydropower production, domestic, irrigation and other uses; river flow control and regulation and international border stabilisation; and inter-basin water transfer.

This subcomponent would involve the following: (i) strengthening capacity of basin staff and Ministry and other related national agencies in dialogue and confidence building in projects and programmes for SADC, NBI, Lakes Victoria, Tanganyika, Nyasa, Jipe and Manyara and Zambezi and Ruvuma river basins; (ii) strengthening technical collaboration on research, data collection, and information exchanges with co-riparian states; (iii) development and strengthening of local capacity within MoW and within other related national institutions, including a needs assessment, to secure and utilise trans-boundary water resources; and (iv) promote joint inter-state catchment management and protection, (v) training of relevant basin and Ministry staff, as well as selected and targeted study tours, and support the MoW towards maintaining international agreements; monitoring trans-boundary water resources; negotiations; conflict management between users of trans-boundary waters; and (vi) technical assistance.

Development and Implementation of National Communication and Awareness Strategy

It is particularly important that stakeholders and communities take ñownershipò, ñbuy inò, and fully participate in WRM. Two-way communication and consensus building at the stakeholder and community levels is critical.

This component includes a National Communication and Awareness Strategy to:

- educate the wider Tanzanian population on the benefits of the wise use of water, on the conservation of water and on the value of an integrated approach to water resources management and development
- develop education curricula for all school levels focusing on the importance of wise use of and proper management of an increasingly scarce resource
- support re-structuring programmes of the institutions of higher learning to focus on the emerging water resources management and development challenges that a new generation of water resources personnel will need to address.

Envisaged interventions include: (i) developing a National Communication and Awareness Strategy for water resources; (ii) training and capacity building needs for water resources management staff to develop and implement the strategy; (iii) implementation of the strategy including seminars, workshops, training and study tours; (iv) provision of specialised equipment and software; (vi) radio and TV air-time; and (vii) development of a website.

Strengthen Training Institutions for IWRM

Tanzania has several institutions of higher learning which offer degrees, diplomas and different technician level qualifications. These institutions are: (i) the University of Dar es Salaam (UDSM), (ii) Sokoine University of Agriculture (SUA), (iii) University College of Lands and Architectural Studies (UCLAS), (iv) Dar es Salaam Institute of Technology (DIT), and (v) Rwegarulila Water Resources Institute (RWRI). The MoW will collaborate with the water sector training institutions to: (i) strengthen and improve curricula, equipment, and local and international expertise, to build their teaching capacities to meet sector needs; (ii) support the establishment of required laboratory facilities and teaching staff requirements; (iii) identify and work with internationally recognised institutions in achieving this objective; and (iv) promote a national award for best performing students in IWRM, and for innovations in water resources.

Flood and Drought Management

Water insecurity is compounded by inadequate investment in construction of water storage to buffer against the impact of droughts and floods (climate variability). These events are also associated with loss of life and damage to property on a number of occasions. This hydrological variability (floods and droughts) results in constant economic risk, and managing the extreme variability has always required considerable societal adaptation, and high levels of investment and skill. Key sectors including hydropower, urban and rural water supply, and agriculture will remain vulnerable to both floods and droughts unless there is an increase in infrastructure investment.

Flood and drought management interventions will include: (i) preparation and agreements on disaster response organisational structures; (ii) preparation, financing and implementation of disaster advance warning systems; (iii) development of disaster contingency plans and procedures and training of personnel in their use; (iv) development of dam-safety measures to mitigate the impacts of floods and droughts; and (v) the identification and conducting of studies on climate change responses, and (vi) studies on the potential for and feasibility of large, medium and small scale dams and rainwater harvesting and their development, which could have a potential for buffering against climate variability.

Cross-cutting Activities

Cross-cutting activities related to WRM include the following:

Disaster management: (a) establish local flood mitigation and warning systems and train staff on their use; (b) establish a parallel drought warning system; (c) address dam safety management across basins with major dams, in the Pangani (Nyumba ya Mungu Dam), Rufiji (Mtera and Kidatu Dams), and Wami-Ruvu (Mindu Dam); (d) facilitate the development of an integrated disaster response process; (f) facilitate impact mitigation in collaboration with the Ministries of Agriculture and Food Security and other institutions, and (g) develop appropriate databases.

Raising public awareness: (a) conduct public campaigns and awareness creation through the media; (b) develop a WR-Website/basin websites and prepare/distribute various pamphlets on WRM (and the role of the BWOs) in the Basins; and (c) strengthen BWO-stakeholder and BWOs-client linkages by pro-actively participating in more local WRM initiatives.

Interagency networking: There is an on-going problem of communication and the efficient sharing of responsibilities for sustainable water management in the basin. Thus: (a) establish

an information exchange through a website; (b) develop procedures to facilitate more effective coordination of WRM initiatives by various actors within the basin; and (c) development an ñopen-doorò communication strategy with all WRM-related agencies, stakeholders, and clients in their basins.

Establishing WRMIS: The envisaged WRMIS will be a basin-tailored River Basin Management Model (RBMM), a river basin simulation model to be used for planning, management and decision making. This intervention will include: (a) assessing the needs; (b) designing and setting up the MIS system; (c) testing and train staff, and then; (d) expanding MIS use.

Research and Development: Specific studies are required to arrive at a better understanding of issues so that appropriate interventions can be designed. Some of these studies are: (i) water balance studies of Lake Rukwa, Victoria and Tanganyika - as the levels of the lake have dropped substantially; (ii) evapotranspiration studies of Lower Moshi; and Usangu Plains - on the processes which contribute to the heavy use of water, thereby drying up the Great Ruaha River through the Ruaha National Park; (iii) development and implementation of measures towards restoration of year-round-flows; (iv) economic assessment of the Usangu catchment in the Rufiji basin - which is critical for water allocation decisions; (v) impacts to hydrological regimes of land use types (forestry, agriculture and urbanisation) - to get a better understanding of the processes involved for more effective catchment restoration; (vi) social, economic and environmental processes for Kilombero wetlands and other wetlands; and (vii) other studies (to be determined). Specific research activities are also required to forecast trends in water resources availability, groundwater resources potential, recharge mechanisms in the basins, use and socio-economic and environmental processes.

4.1.4 National Cross-Sectoral Investment Programme

Harmonisation of Sector Policies, Laws, Strategies and Plans

The water resources aspects of the NAWAPO have implications on all water using sub-sectors such as agriculture, energy, industry, livestock, mining, environment, tourism and fisheries, as well as domestic water supply. The NWSDS has been developed to support re-alignment of sub-sectoral policies (e.g., energy, irrigation, industry, mining, environment) with the water policy and to provide a focus on specific roles for the various actors through more clearly defining their roles and responsibilities and, hence, the removal of duplications and omissions. This will be accomplished by supporting a sectoral policy and legal re-alignment between the NAWAPO Policy and Energy Policy, Irrigation Bill, Environment Bill, Industrialisation Policy, Mining Act and Lands and Settlement Policy, with a view to harmonise the social and economic benefits from the use of water. This will also be a critical process for attaining MKUKUTA, MDG and Vision 2025 objectives and targets. To achieve this, the following will be implemented: (i) identify and support pilot infrastructure; and (ii) identify required institutional strengthening and capacity building needed to implement the water resources aspects of the harmonised policies.

Cross-Sectoral Coordination

Water resources reforms, management and development is a cross-sectoral issue requiring involvement from all water using sectors at the national, basin and local levels, for which appropriate coordination mechanisms are essential in attaining specific objectives and targets. But sectoral involvement and coordination has not yet been very effective. The cross-sectoral coordination that is envisaged under this programme component would target, among others, the following key issues: (i) water for the environment; (ii) water quality

standards; and (iii) protection of water resources. This entails implementing the following: (a) catchment studies and restoration programmes; (b) training at different levels; (c) development of regulations; and (d) the design and establishment of coordination mechanisms across government agencies.

A multi-sectoral National Water Board (NWB) will advise the Minister responsible for Water on appeals and on sectoral integration in water resources planning, inter-basin conflicts and inter-basin water transfers. The role of the NWB will be to review and approve Annual Work Plans for the whole programme. It will resolve any cross-sectoral problems associated with programme implementation, sanction any major initiatives under the programme including budgets, implementation mechanisms, and procurement for materials, civil works and consultants, give policy direction and advise the Minister on appeals.

Development of Procedures and Guidelines

Water resources planning and management is the combined research, technical works and administrative measures required to utilise the availability of water resources (quantitatively and qualitatively) for the needs of society. It is a process that takes into account the socio-economic concerns in a basin, aimed at solving the problems of supply, demand and control within the confines of the environmental systems that also depend on the water resources. It is undertaken based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good, whose quantity and quality determine the nature of its utilisation. This definition highlights many issues and factors involved: procedures, regulations, institutions, and financing. Presently, however, there are still no procedures and guidelines to facilitate the WRM and sectoral linkages.

This programme subcomponent aims at rectifying this weakness by implementing the following: (i) define specific administrative, procedural, legal (regulations) and institutional responsibilities between MoW and Ministry of Environment (MoE) over pollution control from both point and non-point sources; (ii) jointly with MoE and other related sectors, develop Best Management Practice (BMP) procedures and guidelines for controlling pollution of water resources from non-point sources; (iii) jointly with the fisheries sector, develop procedures and guidelines for the management of inland waters, fish levies and water quality guidelines; (iv) jointly with Ministry of Energy and Minerals on pollution from mining; and (v) develop guidelines for water quality assessment and protection, water pollution control (municipal and industrial wastewater) and non point source controls, water allocation and enforcement, source protection, water conservation for urban utilities and irrigation, wetlands management, lake basin management, aquatic weed management, environmental flow assessment, etc.

4.2 Rural Water Supply and Sanitation Component

The MoW will take the lead role in implementing the RWSSP component. The programme component supports a decentralised demand-responsive delivery mechanism and has three main sub-components:

- institutional strengthening and development
- district management support; and
- capital investment for water supply and sanitation services.

4.2.1 Implementation Arrangements

National Level

The institutional framework for RWSS is being streamlined to meet the challenges of cost-effective and sustainable provision of rural water supply services. Roles and responsibilities of the different stakeholders are being matched to their interest and capabilities to ensure their effective participation. New organisations are being brought in at different levels and existing ones are being restructured. This includes the private sector with greater efficiencies and cost-effectiveness in key areas.

Linkages and relations between national, regional and district levels are being clearly established in accordance with NAWAPO and the LGRP. Likewise the roles and responsibilities of MoW, PMO-RALG, Regional Secretariats and District Councils are being redefined. MoW is envisaged as transferring many of its responsibilities to local government, user communities, and the private sector. Specialised personnel meeting the MoWôs new requirements particularly in the areas of Information, Education and Communication (IEC), sanitation and hygiene promotion, capacity building, community development, and institutional development are being recruited.

Due to a vast number of hand pumps (48% of all schemes) envisaged in the programme, a supply chain for hand pumps and spares already established in three regions shall be expanded to cover the rest of the regions.

Regional Level

The Regional Secretariats (RSs) are mandated to support the LGAs and oversee water supply initiatives and water use planning in their regions. They will also provide a link between District Councils (DCs) and the MoW in planning and development of RWSSP components. At present, the RSs do not have the capacity to effectively discharge these responsibilities. A RWST is being created in each Regional Secretariat (RS) with a primary function of supporting LGAs through technical assistance (TA) and training. They are the regional equivalent of the District Water and Sanitation Team (DWST).

District Level

District Councils and their DWSTs facilitate needs identification and preparation of community plans through participatory planning. They prioritise sub-projects and annually prepare a district plan and budget through SWAP, based on demand-responsive approaches. RWSSP funds are released to DCs on the basis of these plans and budgets. The District Councils implement the WSDP at district level. It provides technical and financial support to communities in planning, implementing, operating, and maintaining water facilities, and is a linkage between water basin offices, village WATSANs/COWSOs, Water User Groups (WUGs) and other Water User Entities, the private sector and NGOs. The DWST also oversees and coordinates WSDP activities within the district, and leads in the preparation of annual district water and sanitation plans.

Community Level

Water user entities and user groups are the lowest appropriate management level for RWSS services. COWSOs and WATSAN committees, established in villages are responsible for the planning, management, and O&M of the facilities. This includes designing sub-projects and preparing proposals, getting approval and subsequent funding, monitoring construction, setting tariffs, collecting revenue, and providing reliable services to the consumers.

The search for effective institutional options to manage operation and maintenance of the completed rural water schemes in a sustainable manner will be an ongoing activity under the RWSSP. Community management of water and sanitation services can take different legal

forms. There are several options for rural water supply and sanitation management systems for both small scale and large schemes. These COWSOs may be in the form of a Water User Group (WUG), Water User Association (WUA), Company limited by guarantee, Company limited by share, Board of Trustees or Cooperative Society. The FSPs shall assist communities to draft constitutions for appropriate legal entities to manage their systems.

The choice of a management system will largely depend on the technical option chosen and the number of communities served by the scheme. There are several types of technical options including a single point source (such as a shallow well, spring box or borehole), a single village piped scheme (pumped or gravity), and a multi-village piped scheme (pumped or gravity).

Private Sector

Specialised NGOs or consulting firms (FSPs under contract) or extension workers from the District itself build the capacity of the user groups or WATSANs. Consulting firms as TSPs assist the DWSTs in design and construction supervision. The roles of the TSP also include assisting in participatory planning and sub-project design, preparing detailed designs and cost estimates and tender documents of sub-projects, and assisting in the choice of technology, in collaboration with the FSP.

4.2.2 District Management Support

Strengthening of district management is ongoing in all LGAs, and all districts will be brought into the programme in which they will be equipped with adequate office and furnishings, supplies and transport to accommodate coordination and monitoring of the extensive programme.

4.2.3 Rural Water Supply and Sanitation Facilities

The RWSSP has three goals for improving sustained and equitable access to water supplies: 65% coverage by 2010 (MKUKUTA)[26]; 74% coverage by mid-2015 (Millennium Development Goals, MDGs)[27], and 90% coverage by 2025 (Development Vision 2025 for Tanzania[28]). Satisfaction of these coverage targets and other programme objectives calls for providing water supply services, promoting sanitation and hygiene to an additional 33.8 million people between 2005 and 2025. The investment shall adopt a formula based allocation of financial resources to LGAs. The formula jointly agreed by PMO-RALG, MoF and MoW, provides for equitable distribution of funds, i.e. disbursing more funds to LGAs with less service coverage.

Twenty-four (24) districts had a ñhead startò having begun implementation of the Rural Water Supply and Sanitation Projects through different initiatives. All districts will be included in the RWSSP by 2006/2007; some already have begun construction and others are in the planning stage. In the early years of the plan, higher rates of investment and coverage are allocated to those districts with lower coverage.

Overall, projections for coverage meet the long-term 2025 target of 90% while the interim milestones of 65% for 2010 and 74% for 2015 are exceeded. This is due to the application of a measured and graduated rate of progress and expenditure resulting in coverage rates of

[26] Government of Tanzania (2005) National Strategy for Growth and Reduction of Poverty, MKUKUTA www.povertymonitoring.go.tz
[27] UN General Assembly (2000) UN Millennium Declaration, A/RES/55/2.
[28] United Republic of Tanzania, (1999), ñDevelopment Vision 2025 for Tanzaniaò Dar es Salaam.

69% in 2010 and 79% in 2015. These projections are based on district populations and growth rates reported in the 2002 Census[29] (see Fig. 4.2). The target population excludes regional centres but includes all district headquarters and small towns. However, activities of district headquarters and small towns will be implemented under UWSS. A list of small towns is shown in Annex I.

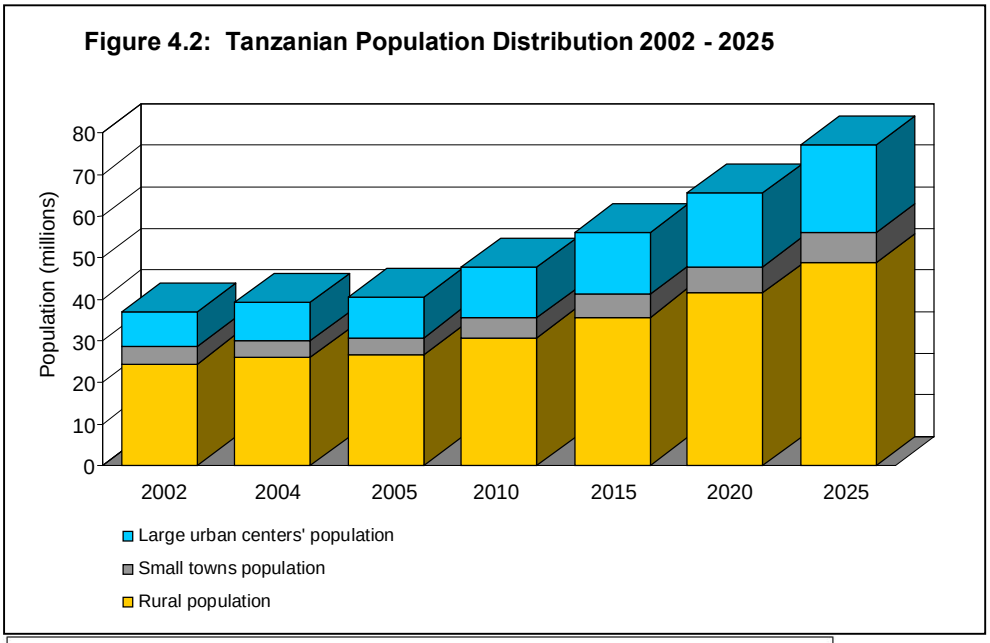
Achieving the RWSSP objective of 90% water supply coverage by 2025 will simultaneously result in the achievement of the sub-sector MDGs in 2015. Ensuring that the targets are attained will require the rapid scaling-up of planning and implementation capacity at every level, and within sub-sector related institutions in particular.

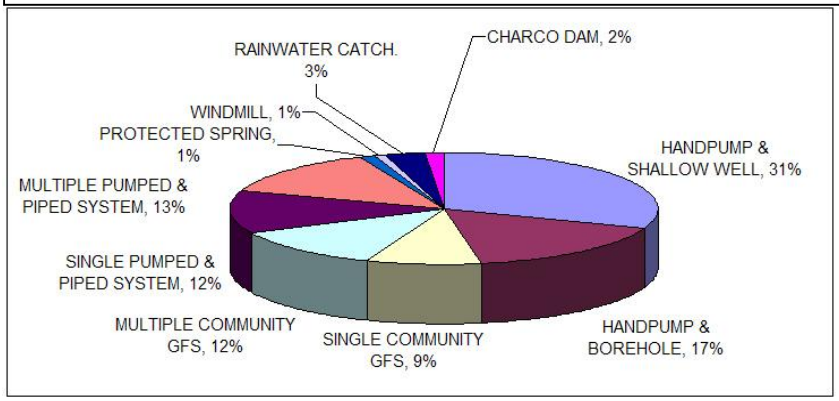
Construction will be relatively slow during the first two years while RWSTs and DWSTs train, prepare, set up project management systems and gain experience in implementation of district-based water and sanitation programme. In subsequent years, each district will build its implementation capacity, averaging about 1.6 million new water users per year programme-wide. The pace of work will peak during 2016 to 2020 with an average of 1.9 million new beneficiaries per year.

Conditions in Tanzaniaôs districts vary widely, from semi-desert to rain forest. The technologies used for acquiring water supply are correspondingly varied. A Demand Assessment survey carried out in 18 selected districts provided a good understanding of existing WSS conditions across the country, including the mix of technologies being used. Findings were coupled with first hand knowledge of consultants and MoW staff about the technologies used in each district. The resulting analysis of technology mixes in use today closely reflects the mix, which will be adopted during the plan period (Fig. 4.3).

[29] United Republic of Tanzania (2002) Household and Census Report.

Figure 4.3: RWSS Technology Mix





The technology mix includes hand-dug wells equipped with hand pumps, boreholes and hand pumps, gravity-fed piped systems, electric- or diesel-driven pumped and piped systems, charco dams, protected springs, and windmills. The proportion of each of these technologies in use depends on the climate, topography and the type of water source.

On the basis of the populations to be provided with new access to services, water supply coverage was disaggregated by technology type across the RWSSP period (2005-2025). The projections shown in the figure are the product of several determining factors at the district level, including the existing technology mix in the district; and the number and percentage of residents currently without access to a safe water supply. It is estimated that by 2025 the

largest proportion (31%) will be served by shallow wells equipped with hand pumps, 25% by pumped-piped systems, 21% by gravity-flow piped systems, and 17% by boreholes equipped with hand pumps. A limited number of other locations will be served by protected springs, windmills, rainwater catchment or charco dams.

A portion of RWSS systems which are currently in use will, at some point during the Programmeôs timeframe, require substantial re-investment in order to continue to provide adequate service to existing water users. Such cases will form part of the Programmeôs work. It is estimated that 25% of all existing functional systems will require major investment in rehabilitation supported by the Programme. This implies that some 4.0 million current water userôs systems will undergo rehabilitation work during the Programme. It is important to note that beneficiaries of rehabilitation work are not counted as new water users in the projection of future coverage.

Sanitation: will be implemented at both household and primary school levels. Household sanitation will be based on six principles: (1) government commitment to a well coordinated programme approach; (2) the household being able to choose from a range of options; (3) social marketing through community sanitation clubs; (4) affordable/effective technology; (5) trained sanitation masons working within the community; and (6) programme coordination and management. For household sanitation, five stakeholders shall be involved; i.e. the LGA and its staff, sanitation consultants and NGOs or CBOs responsible for designs and implementation of the demonstration latrines and promotion campaign, sanitation clubs made up of members of the community, sanitation masons (both men and women of the community) trained by the sanitation consultant in latrine construction and promotion, householders and MoW and the Regional Secretariat for technical support. Education on hygiene and sanitation, including hand washing, will be promoted.

Primary school sanitation involves constructing permanent latrines for demonstration and ensuring improved water supply service at the schools in the RWSSP villages. Implementation will be driven by the DWST members responsible for health and education. At the school, responsibilities will be held by the head teacher and other teachers as well as student sanitation clubs, which will be responsible for promoting hygiene and sanitation education, including hand washing within the school community for a gradual behavioural change.

Sanitation promotion including latrine upgrading and hygiene improvements will be carried out in parallel with water supply service provision. In this way, facilitation, training and promotion efforts reinforce one another. The capital costs of installation or improvement of latrines are to be borne by the households.

4.2.4 Institutional Strengthening and Development

Anticipated Institutional Strengthening and Development for the RWSSP will include: stakeholder consultations, project planning and management support, capacity building, private sector support, RWSD head office support and Regional Secretariat support. Capacity building and training will encompass human resources development, organisation and operational capacity strengthening and organisational system improvements. The stakeholders who are targeted for capacity building and training are the community and its organisations, the District Councils, Service Providers (FSPs and TSPs), the Regional Secretariat and the RWSD of the MoW. In particular, the stakeholders will be strengthened in their participatory skills, their awareness of social and environmental issues and result based management within the context of programme management. At the regional level, the approach will be to train a team of professionals within the Regional Secretariat (the RWST). They will monitor, train and support the LGA level.

4.3 Urban Water Supply and Sewerage Component

The programme objectives for urban water sub-sector are to increase the proportion of urban population with access to safe and clean water from 78% in 2005 to 90% by 2010; and to 95% by 2015. Also, sewerage service coverage will be raised from 17% in 2003 to 30% by 2010 and to 100% by 2025.

Also, WSDP with respect to UWSS aims at developing the existing UWSAs into bodies that are financially autonomous and commercially viable so that they are capable of providing efficient and cost-effective services to all sections of the community in their supply areas.

The MoW will take the lead role in facilitating implementation of the UWSS component. The programme component has three main sub-components:

- Capital Investment for DAWASA and UWSAs;
- Management & Operations Support at UWSA level; and
- Capacity Building at National and UWSA levels.

4.3.1 Implementation Arrangements

UWSAs are to be transformed into Water Supply and Sanitation Authorities (WSSAs), which will be licensed and regulated by EWURA. A Board will manage the Authorities with members appointed by the Minister. The UWSSP proposes that the Board be reduced to six members, appointed for their proven business and commercial experience, and that a Consumer Consultative Council for each authority, comprising local officials and consumer representatives, be appointed to monitor service delivery and the interests of users. Separating the regulatory, management and monitoring functions will enable Boards to concentrate on managing their Authorities as commercial entities, while the regulator will ensure efficiency and equity and the Consumer Consultative Councils will protect the welfare of the community.

EWURA will license and regulate the UWSAs/WSSAs, with the licence replacing the present Memorandum of Understanding. The UWSSP proposes that when issuing licences, the Regulator should focus on nine Key Performance Indicators (KPIs), which measure crucial financial and service delivery outcomes rather than the means of producing the outcomes. In response to concerns expressed by the Consumer Consultative Councils or others, it also proposed that the EWURA and MoW impose more vigorous supervision on any Authority failing to meet the set objectives.

4.3.2 Strengthening UWSA Operations

Authorities will modify their organisation and management structures to respond to the challenge of commercialisation of the UWSAs, which is the key to improved service delivery.

Authorities are able to improve service delivery by outsourcing selected non-core activities to the private sector. The UWSSP has identified a range of services where the efficiencies of the private sector can lead to cost savings or improved performance. Also identified are a number of areas where UWSAs could outsource services to neighbouring Authorities to maximise the use of scarce resources.

Demand Forecasting

Planned development projects will link demand forecasts to future expected tariffs. These demand forecasts will incorporate an assessment of the impact of affordability and willingness to pay.

Water Resources Assessment and Development Planning

Water resources development plans will include an assessment of the yield of water sources based wherever possible on historical records, coordination with basin authorities to collect additional records and rigorous analyses using all available data. UWSA management will be trained in the methods of analysis and the importance of keeping good records of the performance of their sources. In the preparation of UWSAôs long-term development plans, UWSA management will be closely involved and remain fully conversant with proposals being made and committed to their implementation. Sewerage schemes will be formulated as part of overall plans for sanitation, and only developed where they offer greater net benefits than on-site sanitation.

Unaccounted-for-Water (UfW) Control

The MoW will be strengthened to support and monitor UWSAs while UfW control sections will be established in all UWSAs. This will include provision of equipment, training of staff and planning of UfW control programmes. UWSAs not included in this initial programme will be included in a second stage, or contract UfW control services from other UWSAs that have been developed as centres of competence.

Water Quality Control

UWSAs will take more responsibility for their water quality control by monitoring basic parameters, such as residual chlorine and turbidity, using their own facilities. They will also contract out periodic monitoring to MoWôs water quality laboratory, government chemist or private laboratories.

Mapping, GIS, Network Analysis and Meter Workshops

UWSAs will improve the mapping of their networks and where digital base mapping is available, they will create system mapping in geographical information systems (GISs). For Authorities that will be responsible for extending their own distribution systems in the future, a network model will be developed. Since there is a commitment to metering, workshops will be established in Mwanza, Arusha, Mbeya and Dar es Salaam for checking and repair of customer water meters.

4.3.3 Fiscal Strengthening

Ultimately, all UWSAs need to become commercial organisations with increasing responsibility for meeting all their own O&M costs and capital investments. The following are designed to strengthen their fiscal independence and sustainability:

Tariff Setting

Willingness to pay surveys will be undertaken in three or four towns to provide guidance on charges that people are both able and willing to pay for different levels of service under different circumstances. A set of guidelines on tariffs will be prepared by EWURA after the surveys have been completed for use in these and other towns.

Billing Systems

All Authorities will eventually use modern computerised billing systems, although in the short term some authorities may retain paper-based systems. Others will be encouraged to use the system of a larger neighbour or share a system with another authority. Moreover, whether computer or paper is used, the accuracy of the data will be improved and management will check that overall billing levels are consistent with water consumption data.

Ownership of Assets and Depreciation Allowances

Eventually, all Authorities will take full ownership of their assets, and re-value and include realistic depreciation allowances based on the modern equivalent asset value in their accounts. Authorities that cover their full depreciation allowance will then be able replace all worn out equipment and civil works from their own revenues.

Arrears, Control of Operating Costs and Preparation of Accounts

Authorities will improve their management of customer debt to prevent growth of arrears. All bad debts that genuinely cannot be collected will be written off. All authorities will review their operating costs, especially personnel, administrative and overhead costs, and reduce them wherever they are significantly above the average level for the size of the Authority. UWSAs will improve the accuracy of their accounts, provide greater clarity on some items of expenditure and disaggregate their costs in a standard way to facilitate benchmarking of their operational efficiency.

Funding of Investments

Investment, in the immediate future, will continue to come from grants, but wherever possible Authorities will be expected to fund investments from their own resources. All larger Authorities with a readily available source of water, including those on Lake Victoria and those with good groundwater near the town, should be able to fund a significant proportion of the cost of expanding their systems. It is proposed that investments in urban water and sewerage systems are funded by a combination of grants and loans, and direct grants from donor agencies where they prefer to finance individual projects independently.

4.3.4 Upgrading and Expansion of Water Supply and Sewerage Systems (2005-2010)

Most UWSAs need significant immediate upgrading and expansion of infrastructure. While several authorities have ongoing or planned donor-funded projects, others are receiving little assistance other than government grants for small projects. The towns have been divided into four groups, reflecting the urgency of their needs and the support they have received.

Priority is given to towns that have not previously received significant donor funding and urgently require assistance to upgrade their water supply systems.

Table 4.1: Towns That Have Not Received Assistance (2005)

UWSA	Requirements
Bukoba	Review of feasibility study and refurbishment and upgrading of water supply system, including new intake and treatment plant, in line with feasibility study adjusted for revised demand forecast.
Kigoma	Upgrading of water supply system, including reconstruction of intake, main pumping station and rising main, and refurbishment and extension of distribution network.
Babati	Refurbishment, upgrading and extension of water supply system, including water resources investigations and development of a new source.
Lindi	Refurbishment and upgrading of water supply system, including either a new source of supply or treatment of existing supplies. It is thought that much of the existing system may have to be replaced.
Mtwara	Refurbishment of existing system, including renewal of raw water pumping plant and rising main, and replacement of old distribution pipe work and possibly pressure control to reduce losses.
Musoma	Review of feasibility study and refurbishment of system to reduce UfW and upgrade the water supply system, including new intake and treatment plant in line with feasibility study adjusted for revised demand.
Sumbawanga	Groundwater investigations and refurbishment and upgrading of water supply system, including water resources investigations and development of new source(s) of supply.

The following towns have received some assistance but still need substantial support to develop long-term solutions to their water supply and/or wastewater systems.

Table 4.2: Towns That Have Received Limited Assistance

UWSA	Project Requirements
Morogoro	Refurbishment of system, replacement of Mambogo Water Treatment Plant (WTP), extensions to water and sewerage networks, and preparation of a long-term water resources development plan.
Tabora	Review capacity of Igombe reservoir; upgrade water supply works to limit of reservoir capacity, extensions to water and sewerage networks.

The following towns have received substantial assistance for major projects in recent years. Further assistance is needed to continue development, although most of these towns are expected to move towards making significant contributions to investment needs themselves.

These towns are in a good position to use a combination of grant and loan funds from the National Water Fund, although some will need technical assistance in formulating a sound long-term development plan and business plan.

Table 4.3: Towns That Have Received Substantial Assistance

UWSA	Present Requirements
Arusha	Preparation of water resources development plan and implementation of first phase, plus extensions to water and sewerage networks.
Dodoma	Review of feasibility study, wastewater planning and implementation of extensions to water supply and wastewater systems.
Moshi	Preparation of water resources development plan and implementation of first phase, plus extensions to water and sewerage networks.
Tanga	No major project, only further refurbishment and extensions to existing water and sewerage networks.
Shinyanga	Shinyanga will receive water from the Lake Victoria scheme. Further assistance may be needed for refurbishment and extension of distribution system to facilitate delivery of the incoming supply to consumers and to reduce UfW to acceptable level.

Table 4.4: Towns with Ongoing Projects

Mbeya, Mwanza, Iringa, Songea and Singida	These towns have ongoing donor-funded projects, which are expected to meet most of their investment needs to 2010.
Dar es Salaam	• Project to expand water production from Kimbiji ground water sources; expand the treatment plant, replacement of old distribution pipe work and expansion of the system. • Water Supply Rehabilitation and Extension - where water supply infrastructures (treatment/pumping plant, pipeline and reservoirs) will be rehabilitated and extended to cover unsaved areas. • Sewerage & Wastewater Rehabilitation and Extension - where sewerage infrastructures (pumping plant, sewer pipeline and oxidation ponds) will be rehabilitated and extended to cover unsaved areas. • Community Water Supply and Sanitation Programme. • Institutional Strengthening (capacity building of DAWASA). • Studies to be undertaken on Kidunda Dam for Ruvu River regulation.

4.3.5 Requirements 2010-2025

It is envisaged that after 2010 several UWSAs will become increasingly independent, funding works by a combination of grant and loan funding from the financial institutions including the National Water Fund. They will be responsible for arranging their own consultants for design and supervision of construction, mostly implementing projects in accordance with long-term plans prepared earlier. There will be more emphasis on wastewater projects and less on major new water supply investments. However, some towns will still require major investments in new water resources projects, usually in line with feasibility studies conducted in the previous five years.

Table 4.5: Towns that Require Major Water Projects after 2010

UWSA	Project Requirements
Mbeya	Development of new long-term source(s) of supply identified under ongoing project and continuing expansion of the system.
Morogoro	Development of a new long-term source supply identified under previous project and continuing expansion of the system.
Tabora	Provisional project to identify and develop a new long-term source supply, if Igombe reservoir yield is fully utilised, and continue expansion of the system.
Singida	Project to identify and develop a new long-term source supply and continuing expansion of the system.
Mtwara	Project to expand water production, upgrade the treatment plant, continue replacement of old distribution pipe work and expansion of the system.

The remaining towns will need ongoing replacement of worn out equipment and old works, continuing attention to UfW control and further expansion of the system to meet the needs of the increasing population. It is anticipated that this work can be based on long term development plans prepared earlier and undertaken by the individual authorities using local consultants and contractors, and financed from drawings on the National Water Fund.

4.3.6 Development of Wastewater Facilities

Improved sewerage facilities will be needed in all towns as they increase in size and their water supply systems expand. Sanitation studies are recommended for most towns and are expected to recommend:

- expansion of wastewater collection and treatment facilities for those towns which currently have sewerage networks; and
- development of limited wastewater collection and treatment facilities in towns that currently have no sewerage networks and where on-site sanitation facilities are unsatisfactory due to the density of population, high water tables or unsuitable geology.

Towns in need of extensions to existing sewerage and treatment are Arusha, Dodoma, Mbeya, Morogoro, Moshi, Mwanza, Tabora, Tanga, Iringa and Songea. New sewerage and sewage treatment systems will be needed to serve the central commercial areas and institutions of Kigoma, Mtwara, Musoma, Bukoba, Babati, Lindi, Singida, Sumbawanga and Shinyanga. The development of sewerage systems should be limited to those where there are proven benefits over on-site sanitation.

4.4 Strengthening of MoW

Implementation of the WSDP would be done at different levels from sub catchments, through district and basin levels, up to the national level. The Ministry of Water through its technical division will have overall oversight of the Programme. Detailed information pertaining to the technical divisions is contained in the three components of the WSDP. MoW will also provide general administration. The general administration will be strengthened to provide effective administrative support for the programme implementation. Strengthening of the general administration will be in the areas of office construction, training, and provision of office equipment, MIS and transport.

Staff and officials of the Ministry are presently housed in different buildings located in different areas. In order to have a more conducive working environment and enhance oversight of development and management of the sector, one building will be built to accommodate all national level key staff of different divisions and units.

The MoW general administration will be equipped with adequate transport for monitoring purposes including reviewing, auditing and field monitoring to check for compliance. Periodical reports will be prepared to enhance the Ministry Management Information System and general performance.

4.5 Strengthening of the Executive Agencies

Since 1998, the MoWôs units that were identified for executive agencies are the Drilling and Dam Construction Agency (DDCA), Water Resources Institute (WRI) and the Maji Central Stores (MCS). Ever since, DDCA is operating as an Executive Agency while WRI and MCS are to be established. The ultimate aim of establishment of executive agencies is to change them into being autonomous and financially independent, and therefore graduating from Government subsidy.

4.5.1 Drilling and Dam Construction Agency

The DDCA has a variety of drilling rigs the majority of which are more than 40 years old. The same applies to earth moving equipment. Although DDCA generally has the most experienced drilling crew in the country, its smooth operations are hindered by the old age of the majority of the equipment. Efficiency and effectiveness will be improved through provision of new drilling rigs and associated equipment, earth moving equipment, transport

and training. The drilling sector in Tanzania is still evolving and is presently unable to meet the growing demand, while ground water is increasingly becoming an alternative source. To effectively strengthern the DDCA, a thorough study will be conducted to define best options for supporting implementation of WSDP.

4.5.2 Water Resources Institute

The Institute was started in 1974 with the aim of training technicians who would work hand in hand with engineers, geologists, chemists and other professionals in the water sector. It is the only institute of its kind in East Africa, and similar to one in Zimbabwe. It trains technicians in the fields of water supply engineering, hydrogeology and well drilling technology, hydrology and water laboratory technology.

The Institute buildings at present need rehabilitation. It also needs to be expanded to cater for more advanced training and staff recruitment. Modern equipment is required to keep pace with current advances in technology and training required in the market. A study will be conducted to explore options and the question of human resources planning and development for the sector and the role of the Institute in the implementation of WSDP.

4.5.3 Maji Central Stores

The Central Store has been in operation since the 1960s, with the aim of facilitating fast procurement of water equipment and supplies for government and non-government institutions. Supplies available at the Store include water pipes and fittings, chemicals, water meters and water pumps and equipment.

In order for the Central Store to provide better quality service and achieve independency, the existing buildings need to be rehabilitated, modern office equipment provided and some of the staff members need to undergo more focused and business oriented training.
Moreover, a thorough study will be conducted to define relevance, rationale and best options for MCS to support implementation of the WSDP.

5. INVESTMENT COSTS

Significant investments were made in the Water Sector during the 1970s and 1980s by the Government of Tanzania, in collaboration with development partners and non-government organisations. From the early 1990s to date, the Water Sector has been experiencing a sharp decline in financing for both rehabilitation and new development. This declining trend has continued to the point where the scarcity of financial resources available for development and rehabilitation of the existing schemes cannot meet the infrastructural demand. This works against the stated policy objectives of increasing water coverage and poses a major challenge to the Government.

The lack of a holistic and integrated approach in sector planning and financing of investment has also resulted in the persistence of regional, district and even intra-urban development inequalities arising from disproportionate levels of finance. Financing has been provided through multiple approaches used by financiers (by both Government and development partners). As a result, capital development for the rural water supply, sanitation, and water resources management sub-sectors continues to be under funded relative to the urban water supply sub-sector. Sustainable development of the Water Sector requires holistic planning and financing, stable financial mechanisms and availability of adequate funds for capital investments for both infrastructure expansion and rehabilitation. This also requires appropriate channelling of these resources to the prioritised needs. Under this programme, Capital Investment funding will be planned and sourced through the mechanism of a Sector Wide Approach to Planning (SWAP), and channelling agreed funding to the executing agencies through General Budget Support and other agreed financing mechanisms.

Expenditure for the recurrent costs of water resources management has been derived primarily from two sources. Firstly, the Government exchequer provides funds through budgetary allocations to the MoW and, secondly, through charges for water abstractions. Budgetary allocations from the exchequer have been below those required for effective water resources management and have been declining over the past ten years, with only three to five percent of the Ministryôs budget allocation going to support water resources management activities. The constraint of inadequate resources has resulted into poor performance in a variety of technical, administrative and legal activities, as well as deterioration of infrastructure for continuous water resources data collection, which are important for water resources management and development.

The Government has been disbursing recurrent budgetary allocations to MoW, the regional secretariats and local government authorities to finance water supply and sewerage recurrent activities such as personal emoluments and other expenditures on supervision, technical monitoring, and financial support on operations and maintenance. However, funding from the Government has continued to be constrained with the budget ceilings that are always below the sector requirements. The performance in collection of water revenues from consumers by service providers is generally poor with many consumers not being metered, and the level of unaccounted-for-water is unacceptably high. The combination of constrained government allocations and poor revenue collection has resulted in a shortfall in funds necessary to carry out operation and maintenance, which, in turn, has resulted in deterioration of infrastructure for both rural and urban water services.

Sustainable operation and maintenance of water supply and sewerage schemes will be based on financial mechanisms that ensure adequate levels and appropriate channelling of financial resources. The source of funds for recurrent costs in urban areas will be from

consumers, based on cost recovery tariff principles, while in rural areas communities will be required to pay full operation and maintenance costs and costs of higher service levels, and contribute to capital investment costs, as well as to manage their schemes.

The total cost of the Water Sector Development Programme is estimated at TZS 4,207,980 million (USD 3,366.38 million), to be invested over the 2006 ï 2025 timeframe. These funds would support attainment of WRM, Rural and Urban Water Supply and Sanitation objectives and targets where a total of 48.8 million more people will benefit from improved water supply services.

These costs are summarised in Table 5.1 and supported by further detail provided in Table 5.2:

Table 5.1 (a): Summary WSDP Investment (TZS millions x 1,000)

PROJECT COMPONENT	2006 - 2010	2010- 2015	2015 - 2020	2020- 2025	TOTAL
COMPONENT 1: WATER SOURCES MANAGEMENT					
1.CAPITAL INVESTMENT (INCLUDING BASIN PLANS)	56.26	63.99	56.49	47.91	224.65
2.MANAGEMENT/OPERATION SUPPORT	37.79	54.15	50.00	50.00	191.94
TOTAL WRM COMPONENT COST	**94.05**	**118.14**	**106.49**	**97.91**	**416.60**
TOTAL WRM CUMULATIVECOMPONENT COST	**94.05**	**212.20**	**318.69**	**416.60**	**416.60**
COMPONENT 2: RURAL WATER SUPPLY & SANITATION					
1.CAPITAL INVESTMENT	337.50	439.25	638.10	563.17	1,978.02
2.MANAGEMENT/OPERATION SUPPORT	26.69	14.12	16.37	18.92	
TOTAL RWSS COMPONENT COST	**364.19**	**453.37**	**654.47**	**582.09**	**2,054.12**
TOTAL RWSS CUMULATIVECOMPONENT COST	**364.19**	**817.56**	**1,472.03**	**2,054.12**	**2,054.12**
COMPONENT 3: URBAN WATER SUPPLY & SEWERAGE					
1.CAPITAL INVESTMENT:	599.81	399.04	236.74	49.70	1,285.29
2.MANAGEMENT/OPERATION SUPPORT	38.78	39.90	23.67	4.97	107.33
TOTAL UWSS COMPONENT COST	**638.59**	**438.94**	**260.41**	**54.67**	**1,392.62**
TOTAL UWSS CUMULATIVECOMPONENT COST	**638.59**	**1,077.53**	**1,337.95**	**1,392.62**	**1,392.62**
COMPONENT 4: SECTOR INST. STRENGTHERNING AND CB					
1. OPERATIONALIZATION OF NEW ROLE OF MINISTRY	18.88	1.20	3.70	1.20	
2. TECHNICAL ASSISTANCE FOR SUB-SECTOR PLANNING	18.28	21.94	21.94	21.94	
3. SECTOR COORDINATION AND PERFORMANCE MONITORING	7.75	8.53	8.53	8.53	
4. SECTOR CAPACITY BUILDING	27.00	4.06	3.66	3.66	
TOTAL SECTOR INST. STRENGTHERNING AND CB	**71.91**	**35.73**	**37.82**	**35.32**	
TOTAL SECTOR INST. STRENGT.AND CB CUMULATIVE	**71.91**	**107.63**	**145.45**	**180.77**	**180.77**
OVERALL WSDP					
1. CAPITAL INVESTMENT:	993.57	902.28	931.33	660.78	**3,487.96**
2. MANAGEMENT/OPERATION SUPPORT	103.26	108.17	90.04	73.89	
3. INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING	71.91	35.73	37.82	35.32	
TOTAL ESTIMATED COST	1,168.74	1,046.18	1,059.19	769.99	4,044.11
CONTIGENCIES	**20.10**	**52.31**	**52.96**	**38.50**	
TOTAL WSDP COST	**1,188.84**	**1,098.49**	**1,112.15**	**808.49**	**4,207.98**
TOTAL WSDP CUMULATIVECOMPONENT COST	**1,188.84**	**2,287.33**	**3,399.49**	**4,207.98**	**4,207.98**

The programme resource requirement is also presented in USD in table 5.1 (b) below:

Table 5.1 (b): Summary WSDP Investment (USD millions) for 2006 - 2025

PROJECT COMPONENT	2006 - 2010	2010- 2015	2015 - 2020	2020- 2025	
COMPONENT 1: WATER SOURCES MANAGEMENT					
1.CAPITAL INVESTMENT (INCLUDING BASIN PLANS)	45.01	51.20	45.19	38.33	
2.MANAGEMENT/OPERATION SUPPORT	30.24	43.32	40.00	40.00	
TOTAL WRM COMPONENT COST	**75.24**	**94.52**	**85.19**	**78.33**	
TOTAL WRM CUMULATIVECOMPONENT COST	**75.24**	**169.76**	**254.95**	**333.28**	
COMPONENT 2: RURAL WATER SUPPLY & SANITATION					
1.CAPITAL INVESTMENT	270.00	351.40	510.48	450.54	
2.MANAGEMENT/OPERATION SUPPORT	21.35	11.30	13.10	15.14	
TOTAL RWSS COMPONENT COST	**291.35**	**362.70**	**523.58**	**465.67**	
TOTAL RWSS CUMULATIVECOMPONENT COST	**291.35**	**654.05**	**1,177.62**	**1,643.30**	
COMPONENT 3: URBAN WATER SUPPLY & SEWERAGE					
1.CAPITAL INVESTMENT:	479.85	319.23	189.39	39.76	
2.MANAGEMENT/OPERATION SUPPORT	31.03	31.92	18.94	3.98	
TOTAL UWSS COMPONENT COST	510.88	351.15	208.33	43.74	
TOTAL UWSS CUMULATIVECOMPONENT COST	**510.88**	**862.03**	**1,070.36**	**1,114.09**	
COMPONENT 4: SECTOR INST. STRENGTHERNING AND CB					
1. OPERATIONALIZATION OF NEW ROLE OF MINISTRY	15.10	0.96	2.96	0.96	
2. TECHNICAL ASSISTANCE FOR SUB-SECTOR PLANNING	14.63	17.55	17.55	17.55	
3. SECTOR COORDINATION AND PERFORMANCE MONITORING	6.20	6.82	6.82	6.82	
4. SECTOR CAPACITY BUILDING	21.60	3.25	2.93	2.93	
TOTAL SECTOR INST. STRENGTHERNING AND CB	57.53	28.58	30.26	28.26	
TOTAL SECTOR INST. STRENGT.AND CB CUMULATIVE	**57.53**	**86.11**	**116.36**	**144.62**	
OVERALL WSDP					
1.CAPITAL INVESTMENT:	794.86	721.83	745.06	528.63	
2.MANAGEMENT/OPERATION SUPPORT	82.61	86.54	72.04	59.11	
3. INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING	57.53	28.58	30.26	28.26	
TOTAL ESTIMATED COST	934.99	836.94	847.35	615.99	
CONTIGENCIES	16.08	**41.85**	**42.37**	**30.80**	
TOTAL WSDP COST	**951.08**	**878.79**	**889.72**	**646.79**	
TOTAL WSDP CUMULATIVECOMPONENT COST	**951.08**	**1,829.87**	**2,719.59**	**3,366.38**	

The budgets included in the three programme component investment documents that were used to generate this global figure differ somewhat in various ways, including: format and structure; time periods used; and currency.

The investment programme budgets are merged into a basic structure for comparative purposes. Three major investment categories were used: capital investment; management and operations support; and institutional strengthening and capacity building:

- Capital Investment [TZS 3,487,960 million / USD 2,790.37 million)]: The major portion of investment requirements is allocated to capital costs within all three programme components, including among other items: rural & urban water & sewerage systems; building construction & rehabilitation; office furniture, equipment & computers; vehicles; and technical equipment.

- Management & Operational Support [TZS 375,370 million (USD 300.3 million)]: These costs relate largely to district operational support under the RWSSP and basin-level operational support under the WRMP programmes,as well as activities under UWSS including: office space, vehicle operations, travel expenses, staff salaries support, and other items.
- Capacity Building [TZS 180,770 million (USD 144.62 million)]: All three programme components include investment in capacity development of various kinds at district, basin, UWSA, regional and national levels.

A contingency of TZS 163,870 million (USD 131.10 million) has been included.

The total cost of the Water Sector Development Programme for the MKUKUTA period 2006 ï 2010 is estimated at TZS 1,188,880 million (USD 951.08 million). These funds would support WRM, Rural and Urban Water Supply and Sanitation subsectors where a total of 12.6 million additional people will benefit from improved water supply services. The summary WSDP cost for the first 5 years is indicated in table 5.2 below and its equivalent table in USD in Annex B1 and the detailed costing table in Annex B2:

Table 5.2: Summary WSDP Investment Cost (TShs. Million X 1,000) for 2006 - 2010

Programme Component	***06/07***	***07/08***	***08/09***	***09/10***	***10/11***	***TOTAL***
A. Component 1 - Strengthening of WRM Framework	5.15	33.15	34.65	17.79	3.32	94.05
A1. Basin Level WRM Support	2.02	15.44	8.60	8.42		
A2. Integrated WRM&D Plans	-	8.34	16.67	-		
A3. Priority WRM Infrastructure	3.13	9.38	9.38	9.38		
B. Component 2- Scaling up of Rural WSS	52.63	66.27	63.35	90.54	90.54	364.19
B1. Management Support to LGAs	10.69	6.21	2.98	2.98		
B2. RWSS Investments	41.94	60.06	60.38	87.56		
C. Component 3- Scaling up Urban WSS	147.81	179.35	137.69	88.94	84.81	638.59
C1. Management Support to Utilities	3.37	7.91	10.00	8.94		
C2. UWSS Investments	144.44	171.44	127.69	80.00		
D. Component 4 - Sector Inst. Stregthening and CB	7.59	28.06	17.63	9.50	9.13	71.91
D1. Operationalization of new role of Ministry	1.19	8.81	7.88	0.50		
D2. Technical Assistance for Sub-Sector planning	0.78	4.38	4.38	4.38		
D3. Sector Coordination and Performance Monitoring	0.75	1.75	1.75	1.75		
D4. Sector Capacity Building	4.88	13.13	3.63	2.88		
E. Contigencies	4.02	4.02	4.02	4.02	4.02	20.10
TOTAL	**217.20**	**310.85**	**257.33**	**210.79**	**191.82**	**1,188.84**
Share	**18%**	**26%**	**22%**	**18%**	**16%**	**100%**

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5.1 WRMP Costs

5.1.1 Context

The Water Resources Management Programme aims to:

- develop a sound water resources management and development framework in all nine basins, for optimising the utilisation of the water resources in a sustainable manner for the various competing uses;
- promote good governance of water resources through empowering water users, encouraging participatory and transparent decision-making, devolving ownership to the user level, and granting secure water rights with responsibilities to the water users, community groups, local government and Basin Boards; and
- strengthen the capacity of Lake Basin offices to address trans-boundary lake and lake basin issues.

The WRMD&I document lays out a three-component plan for the 2005/25 - encompassing: basin-level water resource reforms and investments; national water resources reforms and investments; and national cross-sectoral investment programme.

Basin-level water resource reforms and investments include:

- establishing and strengthening BWOs;
- water resources monitoring, assessment and enforcement;
- water quality management and pollution control;
- protection of important water source;
- water demand management;
- integrated river and lake basin plans; and
- priority water resources infrastructure investments.

National water resources reforms and investments include:

- human resource development;
- operational support to the Water Resources Division;
- trans-boundary WRM;
- development and implementation of National Communication and Awareness Strategy;
- strengthen HRD in IWRM;
- floods and droughts management;
- cross-cutting activities; and
- research and studies.

National cross-sectoral investment includes:

- harmonisation of policies, laws, strategies and plans;
- cross-sectoral coordination; and
- development of IWRM procedures and guidelines.

5.1.2 Investment Costs

The cost of the WRM component is estimated for the 2006 ï 2025 period at TZS 416,600 million (USD 333.28 million) all of which will be invested in basin-level activities, while the remainder is allocated to national and cross-sectoral activities by the water resources division of MoW. The unit costs for capital investment as well as for the operation and maintenance are based on experience gained from implementation of recent water resources projects in Pangani, Wami/Ruvu and Rufiji basins. The unit costs that were used in determining the component costs are detailed in Annex B4.1.

Capital Investment

Of the total investment cost for WRM, about 54% - TZS 224,650 million (USD 179.72 million) - has been allocated for capital expenditure including dam construction, the majority being required at the basin level for:

- Office Construction & Rehabilitation;
- Networks Construction and Rehabilitation;
- Support to Irrigation Schemes;
- Vehicles and Related Equipment;
- Office Equipment, Furniture and Computers;
- Technical Equipment (flow, water level, water quality, groundwater, sediment, and weather stations equipment);
- Priority water resources infrastructure investments as detailed in section 4.1.1; and
- Institutional strengthening of the new WRM organisation structure, and establishment of National WR Information Centre.

At the national level, capital investment will be required for: building construction and rehabilitation; vehicles; technical equipment; and computers.

Management & Operational Support

Support to management and operations under the WRM is estimated at TZS 191,940 million (USD 153.55 million). The basin-level yearly support for nine basins will require about TZS 12,500 million (USD 1.00 million) per basin per annum in order to maintain a critical mass of professionals in each basin who are fully capable of discharging all of their new responsibilities related to assessment and monitoring water availability and use, pollution control, enforcement of the water law, facilitating establishment and strengthening of catchment organisations and local level Water User Organisations, protection of important water sources, and basin IWRM planning, engaging in dialogue processes in an efficient, effective, and sustainable manner.

5.2 RWSSP Costs

5.2.1 Context

The three time-specific programme component goals for improving sustained and equitable access to water supply amongst the rural population include: 65% coverage by 2010 (MKUKUTA); 74% coverage by mid-2015 (Millennium Development Goals) and 90% coverage by 2025 (Development Vision 2025 for Tanzania).

Satisfaction of the above targets and other developmental objectives laid out in the RWSSP require the provision of new water supply services and the promotion of sanitation to an estimated 33.8 million residents and rehabilitated services to 4.0 million residents between 2005 and 2025.

This will be achieved through a mix of technologies and system types, including: shallow wells equipped with hand pumps (31%), pumped & piped systems (25%), gravity flow piped systems (21%), and boreholes equipped with hand pumps (17%). Very limited numbers will be served by protected springs, windmills, rainwater catchment or charco dams, which are limited by specific local conditions enabling their use.

Other investment priorities within the RWSSP include management and operational support to districts, as well as institutional strengthening at the national level.

5.2.2 Investment Costs

The RWSSP covers the 2005/06 ï 2024/25 period, addressing the timeframe encompassed by Development Vision 2025. During this period, overall investment requirements to achieve the above objectives in rural water supply coverage are estimated at TZS 2,054,120 million (USD 1,643.30 million). The unit costs for capital investment in rural and small town water supply, as well as for the operation and maintenance of systems, are based on experience gained from the present implementation of different rural water supply projects, and are derived from average depths, distances, materials used and labour costs in each case. The unit costs used in estimating RWSS component are as itemised in Annex B4.2.

Capital Investment

The major component of the RWSSP budget is related to capital investment in water schemes, totalling TZS 1,978,020 million (USD 1,582.42 million). Construction and rehabilitation of water schemes comprises the largest portion of this investment. The investment in new and rehabilitated water supplies will provide new services to some 33.8 million additional people (including sanitation promotion).

Management & Operational Support to Districts

The strengthening of district management is under way in all LGAs and will continue; it is estimated to cost a total of TZS 76,100 million (USD 60.88 million) to 2025. All districts will be equipped with adequate DWST office space, furnishings, supplies and transport. Ongoing transport and supervision expenses through to 2025 are major items in this category, which is mostly related to field staff essential for the coordination and monitoring of an extensive field programme.

5.3 UWSSP Costs

5.3.1 Context

The overall goal of the UWSSP is to develop the existing UWSAs and DAWASA into bodies that are financially autonomous and commercially viable so that they are capable of providing efficient and cost-effective services to all sections of the community in their supply area. And while it is unlikely that any authority will achieve full financial autonomy in the medium term, all authorities should be moving towards this long-term goal. To this end, the UWSSP lays out necessary measures in management, technical and financial areas in order for UWSAs to achieve financial autonomy and commercial viability.

The UWSSP Summary Investment Plan (UWSSP-SIP) and the more detailed UWSSP (2006) report prepared by the MoW encompass DAWASA and 20 regional headquarters, which are describing the current water and sewerage services in the centres; present strategies for future development of the urban water and sewerage sector; and estimate total investment requirements for meeting development objectives.

The draft NWSDS cites water sector targets which will contribute to achieving the National MKUKUTA targets and the international Millennium Development Goals, including:

- raising the proportion of urban population with access to safe and clean water from 74% in June 2005 to 90% by 2010 and 95% by 2015;
- raising sewerage service coverage from 17% in 2003 to 30% by 2010; and
- reinforcing legal and institutional involvement of local communities and the private sector in developing water supply schemes, and water sources environmental protection throughout the country.

The on-going Dar es Salaam Water Supply and Sanitation Project (DWSSP) will cover the following components within a comprehensive WSDP:

- Water supply rehabilitation and extension - where water supply infrastructures including treatment/pumping plant, pipelines and reservoirs which will be rehabilitated and extended to cover the unsaved areas in Dar es Salaam, Kibaha and Bagamoyo;
- Sewerage and wastewater network rehabilitation and extension - where sewerage infrastructures including pumping plant, sewer pipeline and oxidation ponds which will be rehabilitated and extended to cover unsaved areas;
- Community water supply and sanitation program for development of water schemes in the informal settlements and peri-urban areas; and
- Institutional strengthening and capacity building of DAWASA.

The project which started in 2003 is expected to be completed by end of 2009, is estimated to cost USD 164.6 million.

The cost for studies and construction of a regulation dam at Kidunda along Ruvu River is estimated at USD 70 million. The Lower Ruvu Treatment plant, pumping system will be expanded at an estimated cost of USD 30 million. A 54 inches rising main of 15 km pipeline will be constructed at a cost of USD 56.1 million in the efforts to increase the supply up to 270 million litres per day, which is equivalent to 50%, of the designed capacity.

5.3.2 Investment Costs

This component calls for investments for the construction of physical works for individual UWSAs as well as investments for capacity building projects designed to strengthen the capacity of MoW and the UWSAs including DAWASA to operate, maintain and develop the urban water supply and sewerage systems. The WSDP estimates investment requirements for 2006 - 2025, totalling TZS 1,392,620 million (USD 1,114.09 million).

The investment requirement for DAWASA is almost equal to the combined investment requirement for all other urban centres. This is due to the population size to be served, where about 4 million people are envisaged to be served under DAWASA while only about 3.3 million people are targeted for all the urban centers combined.

The unit costs for capital investment are based on experience gained from implementation of recent UWSS projects in various UWSAs in the country. The unit costs that were used in determining the component costs are detailed in Annex B4.3.

Capital Investment

Overall, required capital investment in water and sewerage systems is estimated at TZS 1,285,290 million (USD 1,028.23 million) over the 2006 ï 2025. Of this, approximately 73% is allocated to water supply, while the rest is destined for sewerage.

Over the initial 2006 ï 2010/11 five-year period, most UWSAs will need significant immediate investment. The UWSSP document categorises these based on the urgency of need and the support they have already received or are currently receiving. Expected investments are detailed by UWSA and include: feasibility studies; improvement/ refurbishment of existing water supply systems (intakes, treatment facilities, pumping, and distribution networks) as well as sewerage systems; extension of networks; water resource investigations, planning & development; UfW management and other projects.

Over the 2011/12 ï 2020/21 period, it is anticipated that certain UWSAs will become increasingly independent, planning projects, securing financing, and contracting for design and construction within the context of long-term plans they have prepared. Fewer towns will require major water supply projects after 2010, while greater emphasis will be placed on wastewater projects. In the case of DAWASA the thrust will be in developing new water sources expanding the water distribution system and expanding the sewerage system.

Management & Operations Support

The UWSAs were established as revenue generating entities responsible for covering their management & operational costs through revenue generation. However, the programme will provide support towards improvement of management and operation of water & sanitation services especially the category C and B UWSAs. A total cost of TShs. 107,330 million (USD 85.86 million) will be required for the period 2006 ï 2025. The resource requirement during 2006-2010 for management and operational will cover the following activities:

- management information system (EWURA + 19 towns), including: equipment, consultancy and training;
- strengthening of UfW unit (MoW), including: equipment, technical assistance, and training; and
- meter testing and repair workshop (four zones), including equipment and training;
- study for willingness to pay surveys (four towns).

5.4 Sector Institutional Strengtherning and Capacity Building

WSDP anticipates to strengthen and develop the water sector institutions as well as personnel at different levels. This component will contain the following sub-components:

- ❖ Operationalisation of new roles of the MoW;
- ❖ Technical assistance for sub-sector planning;
- ❖ Sector coordination and performance monitoring; and
- ❖ Sector capacity building and training.

The resource requirement for institutional strengthening and capacity building for the period 2006 ï 2025 is TShs. 180,770 million (USD 144.62 million). Under the operationalisation of new roles of the MoW, the main activities will include:

(i) The general administration of MoW will be strengthened in the areas of office accommodation, training, as well as transport and office equipment.

(ii) Strengthening Drilling and Dam Construction Agency

The DDCA will be strengthened following a study to define best management options as well as provision of new drilling rigs and earth moving equipment as well as vehicles. To effectively strengthern the DDCA, a thorough study will be conducted to define best options for supporting implementation of WSDP. The costs will be determinded following a study that will be conducted to define relevance, rationale and best options for DDCA and support to the general drilling industry in the country for implementation of the WSDP.

(iii) Strengthening Water Resources Institute

Strengthening of the Institute shall be through improvement of curricula and provision of vehicles, laboratory equipment, geophysical equipment, workshop equipment and office equipment. Furthermore, rehabilitation of the existing building as well as construction of new ones shall be done to accommodate expansion and modernisation of the Institute, so as to cater to modern education and market needs. Other institutions will also be supported in terms of logistics, technical assistance and facilities necessary for supporting effective implementation of WSDP. The costs will be determinded following a study that will be conducted to explore best options for human resources planning and development for the sector and the role of the Institute in the implementation of WSDP.

(iii) Reorganisation of Maji Central Stores

Maji Central Stores (MCS) based in Dar es Salaam, centrally offers supply service to government and non-government institutions, in order to reduce procurement time especially for those going to Dar es Salaam from the country side. With time, market forces dictate that the MCS should compete and operate independently. In order to achieve the independency, it needs to be strengthened through rehabilitation of buildings, provision of up-to-date office equipment, staff training and seed money. Thorough study will be conducted to define relevance, rationale and best options for MCS to support implementation of the WSDP.

6. FINANCING

6.1 Overall Financing Requirements

The overall cost of WSDP initiatives over the period between 2006 ï 2025 has been estimated as TZS 4,207,980 million (USD 3,366.38 million).

Estimates provided in the three programme documents (WRMP, RWSSP, UWSSP) indicate that a total of approximately TZS 2,975,930 million (USD 2,380.74 million) might be available. These include government central budget allocation, rural community and small town contributions, district contributions, water resource revenues, and NGO and donor funds, among others. Thus, in order to carry out the scope of activities envisaged under the WSDP, a financing gap on the order of TZS 1,232,050 million (USD 985.64 million) is to be filled required over the 2006 ï 2025 period. The financing requirement of the WSDP is indicated in Table 6.1 below and its USD equivalent is shown in Annex B3:

Table 6.1: Financing Requirement (TShs millions x1000) for 2006 – 2025

PROGRAMME COMPONENT	2006 - 2010	2010- 2015	2015 - 2020	2020- 2025	TOTAL
WATER SOURCES MANAGEMENT					
COSTS					
COMPONENT COST(PERIOD)	94.05	118.14	106.49	97.91	416.60
CUMULATIVECOMPONENT COST	94.05	212.20	318.69	416.60	416.60
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	16.75	21.16	16.3	6.17	60.38
WATER RESOURCES REVENUES	11.4	44.47	48.92	53.81	158.60
OTHER FUNDING (NGOs,DONORS,ETC)	49.64	44.676	40.21	36.19	170.71
TOTAL AVAILABLE RESOURCES	77.79	110.306	105.43	96.17	389.69
CUMULATIVE AVAILABLE RESOURCES	77.79	188.10	293.52	389.69	389.69
FINANCING REQUIREMENTS					
FINANCING GAP	16.26	7.84	1.06	1.74	26.91
CUMULATIVE FINANCING GAP	16.26	24.10	25.17	26.91	26.91
RURAL WATER SUPPLY & SANITATION					
COSTS					
COMPONENT COST(PERIOD)	364.19	453.37	654.47	582.09	2054.12
CUMULATIVECOMPONENT COST	364.19	817.56	1472.03	2054.12	2054.12
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	43.16	47.40	49.77	52.26	192.59
COMMUNITY FUNDING	17.00	20.40	24.48	29.38	91.26
OTHER FUNDING (NGOs,DONORS,ETC)	303.00	272.70	245.43	220.89	1042.02
TOTAL AVAILABLE RESOURCES	363.16	340.50	319.68	302.52	1325.86
CUMULATIVE AVAILABLE RESOURCES	363.16	703.66	1023.34	1325.86	1325.86
FINANCING REQUIREMENTS					
FINANCING GAP	1.03	112.87	334.79	279.57	728.26
CUMULATIVE FINANCING GAP	1.03	113.90	448.69	728.26	728.26
URBAN WATER SUPPLY & SEWERAGE					
COSTS					
COMPONENT COST(PERIOD)	638.59	438.94	260.41	54.67	1392.62
CUMULATIVECOMPONENT COST	638.59	1,077.53	1,337.95	1,392.62	1,392.62

PROGRAMME COMPONENT	2006 - 2010	2010- 2015	2015 - 2020	2020- 2025	TOTAL
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	83.40	43.86	33.60	-	160.86
UWSA REVENUES	14.00	16.80	18.48	20.33	69.61
OTHER FUNDING (NGOs,DONORS,ETC)	470.25	282.15	169.29	33.86	955.55
TOTAL AVAILABLE RESOURCES	567.65	342.81	221.37	54.19	1186.02
CUMULATIVE AVAILABLE RESOURCES	567.65	910.46	1,131.83	1,186.02	1,186.02
FINANCING REQUIREMENTS					
FINANCING GAP	70.94	96.13	39.04	0.49	206.60
CUMULATIVE FINANCING GAP	70.94	167.07	206.12	206.60	206.60
SECTOR INST. STRENGTHERNING AND CB					
COSTS					
COMPONENT COST(PERIOD)	71.91	35.73	37.82	35.32	180.77
CUMULATIVECOMPONENT COST	71.91	107.63	145.45	180.77	180.77
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	14.30	1.11	1.33	1.46	18.20
OTHER FUNDING (NGOs,DONORS,ETC)	52.11	3.65	0.36	0.04	56.16
TOTAL AVAILABLE RESOURCES	66.41	4.76	1.69	1.50	74.36
CUMULATIVE AVAILABLE RESOURCES	66.41	71.17	72.86	74.36	74.36
FINANCING REQUIREMENTS					
FINANCING GAP	5.50	30.97	36.13	33.82	106.41
CUMULATIVE FINANCING GAP	5.50	36.46	72.59	106.41	106.41
OVERALL WSDP					
COSTS					
TOTAL COMPONENT COST (PERIOD)	1,188.84	1,098.49	1,112.15	808.49	4207.98
CUMULATIVECOMPONENT COST	1,188.84	2,287.33	3,399.49	4,207.98	4,207.98
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	157.61	113.53	101.00	59.89	432.03
WATER RESOURCES REVENUES	11.40	44.47	48.92	53.81	158.60
COMMUNITY FUNDING	17.00	20.40	24.48	29.38	91.26
UWSA REVENUES	14.00	16.80	18.48	20.33	69.61
OTHER FUNDING (NGOs,DONORS,ETC)	875.00	603.17	455.29	290.97	2224.44
TOTAL AVAILABLE RESOURCES	1,075.01	798.37	648.17	454.37	2975.93
CUMULATIVE AVAILABLE RESOURCES	**1,075.01**	**1,873.38**	**2,521.55**	**2,975.93**	**2,975.93**
FINANCING GAP					
FINANCING GAP	113.83	300.12	463.98	354.12	1232.05
CUMULATIVE FINANCING GAP	**113.83**	**413.95**	**877.93**	**1,232.05**	**1,232.05**

Indicative Financing

Given the SWAP framework adopted by the GoT, financing of the Programme will include contributions from a number of development partners, GoT and non Government Actors. GoT contribution will largely come out of the general budget (Vote 49 to the MoW and Vote 56 through PMO-RALG to LGAs) and contributions from the beneficiaries. A coalition of development partners organized under the Development Partner Group-Water will parallel or co-finance the Programme either in a pooled fashion (support all sub-sector Programme) or earmarked fashion (support specific sub-sector Programmes), or through specific project financing, or through GBS.

Current commitments or requests by GoT include the partners below with their relative sub-sector priorities;

Table 6.2: WSDP Indicative Financing Sources from Development Partners (2006-2010)[30]

Development Partners	Proposed Amount	Sector Priority
IDA	US$150 m	All sub-sectors
AfDB	US$80 m	Rural WSS
US-Millennium Challenge Corporation	US$207 m	Urban WSS/WRM
Germany (KfW/GTZ)	US$70 m	All sub-sectors
The Netherlands Government[31]	US$60 m	Rural WSS
Others (Japan, AFD, WSP, WaterAid, GEF, GPOBA, EIB, BADEA, IUCN, WWF, SECO, Habitat, etc)	US$133 m	All Sub-sectors
Total	**US$ 700m**	**Water Sector**

6.2 WRMP Financing

The estimated total cost of WRMP is TZS 416,600 million (USD 333.28 million) over the period to 2025, as shown in Table 6.1.

In this context, the WRMP investment plan proposes that water use revenues will grow from about TZS 661.0 million (USD 0.53 million) per annum in 2006 to approximately TZS 12,500 million (USD 10.00 million) per annum over a ten year period, or by 2015.[32] Beyond this, though not discussed in the WRMP report, revenues are assumed to grow at least in pace with 3% inflation.

Government allocations to the sub-sector, estimated at TZS 2,740 million (USD 2.19 million) in 2006 are projected to grow to TZS 4,020 million (USD 3.22 million) by 2010.[33] Beyond this period, though not discussed in the WRMP report, government allocations are assumed to be sufficient to meet the financing gap between water resource management costs and anticipated revenues. In this case, the requirement for government allocation actually decreases beginning in 2016 as revenues increase over time.

These assumptions result in financing gap of TZS 26,910 million (USD 21.53 million) over the 2006-2025 period, after which no further external financing (loans or grants) would be required.

6.3 RWSSP Financing

WSDP in respect of RWSSP will cost a total of TZS 2,054,120 million (USD 1,643.30 million) over the programme period from 2006 to 2025.

[30] This excludes GBS contributions and financing for ongoing projects
[31] The Netherlands Government contribution, as per the Paris Declaration, will be managed through KfW in a silent partnership mode.
[32] WRMP February 2006, Figure 10.1
[33] WRMP February 2006, Table 8.4.

Government allocations to the rural water sector are estimated to grow from TZS 2,460 million (USD 1.97 million) in 2005 to TZS 7,800 million (USD 6.24 million) by 2007. Beyond this period, government allocations are assumed to increase at 5% per annum. Rural communities are expected to contribute an average of 5% to capital costs of the RWSSP, totalling TZS 91,600 million (USD 73.00 million) over the period 2006 - 2025.[34]

Other funding, from NGOs and external donors are estimated for this same period at TZS 1,042,020 million (USD 833.61 million). These assumptions result in an estimated TZS 1,325,860 million (USD 1,060.69 million) in available resources over the timeframe of the RWSSP.

Given this, the financing gap between available resources and estimated RWSSP costs is estimated at TZS 728,260 million (USD 582.61 million) over programme timeframe.

6.4 UWSSP Financing

The total financial resources required for UWSSP is TZS 1,392,620 million (USD 1,114.09 million) over the programme period to 2025.

Resources identified as likely to be available for capital projects were estimated at approximately TZS 1,186,020 million (USD 948.81 million) over the 2005 ï 2020 period[35].

The financing for the ongoing DAWASA project includes: Government contribution of USD 12.6 million, IDA USD 61.5 million, ADF USD 48.0 million and EIB USD 34.0 million). A total of USD 60.45m has been disbursed and USD 59.33 expended leaving available balance of USD 104m as of June 2006.

6.5 Sector Institutional Strengthening and Capacity Building

WSDP will strengthen and develop the water sector institutions as well as personnel at different levels. This component will contain the following sub-components:

- Operationalisation of new roles of the MoW including strengthening of executive agencies;
- Technical assistance for sub-sector planning;
- Sector coordination and performance monitoring; and
- Sector capacity building and training.

The total resource requirement for institutional strengthening and capacity building for the period 2006 ï 2025 is TShs. 180,770 million (USD 144.62 million). Resources likely to be available are estimated at TZS 74,360 million (USD 59.49 million). Therefore the financing gap is estimated at TZS 106,410 million (USD 85.13 million).

[34] RWSSPRWSSPRWSSP 2006, Table 5.14
[35] UWSSP ï SIP March 2006, Table 4.11

6.6 Source of Funds and Financing Mechanism

Despite the abundant sources of fresh water in the country, supply of water for domestic consumption and for productive use is inadequate. By 2005, approximately 46% of the population in rural areas and 26% in urban areas have no access to clean and safe water supply. Although recent progress (2000 ï 2005) is commendable, the outstanding challenges are still enormous. The sector needs a large scale of resources for ensuring water quality standards; rehabilitation of existing water supply systems back to designed capacities; expansion of water supply networks to correspond to increasing population and new settlements; sustainability and reliability of services; construction of new water facilities to cover areas with no access to clean and safe water; rehabilitation and expansion of sewerage systems and networks. Further more, interventions are needed for improving collaboration and coordination of synergies in dealing with a close linkage between water supply and water borne diseases that affect quality of life through disease burdens aggravated by subsequent spending on healthcare, unproductive time lost during disease nursing and the loss of unit productivity through both time wasted in fetching water and attending to health facilities. On the other hand, resources required for strengthening of Integrated Water Resources Management including sustainable management of water catchments needs are still outstanding.

These outstanding challenges threaten the efforts of the sector in reaching both the international (MDGs by 2015),and the national Vision 2025 and MKUKUTA by 2010 targets and therefore need concerted efforts for mobilising local and foreign financial resources and optimisation of the use of funds.

Sustainable implementation of the WSDP requires holistic planning and financing, stable financial mechanisms and availability of adequate funds for capital investments for infrastructure expansion, rehabilitation and water resources management. This also requires appropriate channelling of the resources to the prioritised needs. Indicative percentage proportion of funds to sub-sectors are 50:20:15:15,[36] to RWSSP, WRM, UWSSP and cross-cutting aspects (planning, accounting, general administration and executive agencies), respectively. The proportions may change in accordance with circumstances at the time.

The Water Sector needs to recapitalize and affirm more commitments from its sources of funds, which include the GoT, development partners, NGOs, user fees, revenue from WSS services, community contributions, private sector investments, and other contributions from individuals and institutional stakeholders. One of the frameworks that can ensure sustainable availability of financial resources in the water sector is a National Water Fund.

Establishment of the National Water Fund

Implementation of the WSDP requires an increased resource base with the aim of meeting both MDG and MKUKUTA targets with ultimate reduction of poverty levels among the population. However, budgetary allocation to the water sector does not match the financial requirements.

Due to limited resources and a continued decline of budgetary allocations to the water sector as compared with the sectorôs investments requirements, the need for establishment of a

[36] Proceedings of Stakeholder Retreat on Sector Wide Approach to Planning in the Water Sector, MoWLD, Arusha, May 2003.

strategic plan for an innovative funding arrangement becomes crucial. Hence, the rationale for proposing to establish a National Water Fund is evident.
The Water Fund is intended to be one of the financial sources needed to provide investment support for water service provision and water resources development and management. The fund will enable commercially able water supply utilities to respond to the funding need arising from emergencies such as interventions due to droughts, infrastructure damage due to floods, pump breakdown and pipeline bursts. The funds would be obtained in terms of soft loans. The Water Fund is expected to accelerate government effort in restoration and expansion of water services for commercially viable utilities.

The National Water Fund will borrow best managerial practices from other similar arrangements like the National Road Fund, with an autonomous multi-sector Board of Directors at the national level for making allocation decisions and the National Steering Committee for approval of fund procedures and provision of proper guidance after synthesizing and deciding on the monitoring and evaluation processes and reports. The Water Supply Act will establish the National Water Fund, and its operational procedures will be narrated in the subsidiary legislation that will follow after ascension of the Act.

It is envisaged that the National Water Fund will attract additional financing for increased investments in the water sector. Sources for the fund will include:

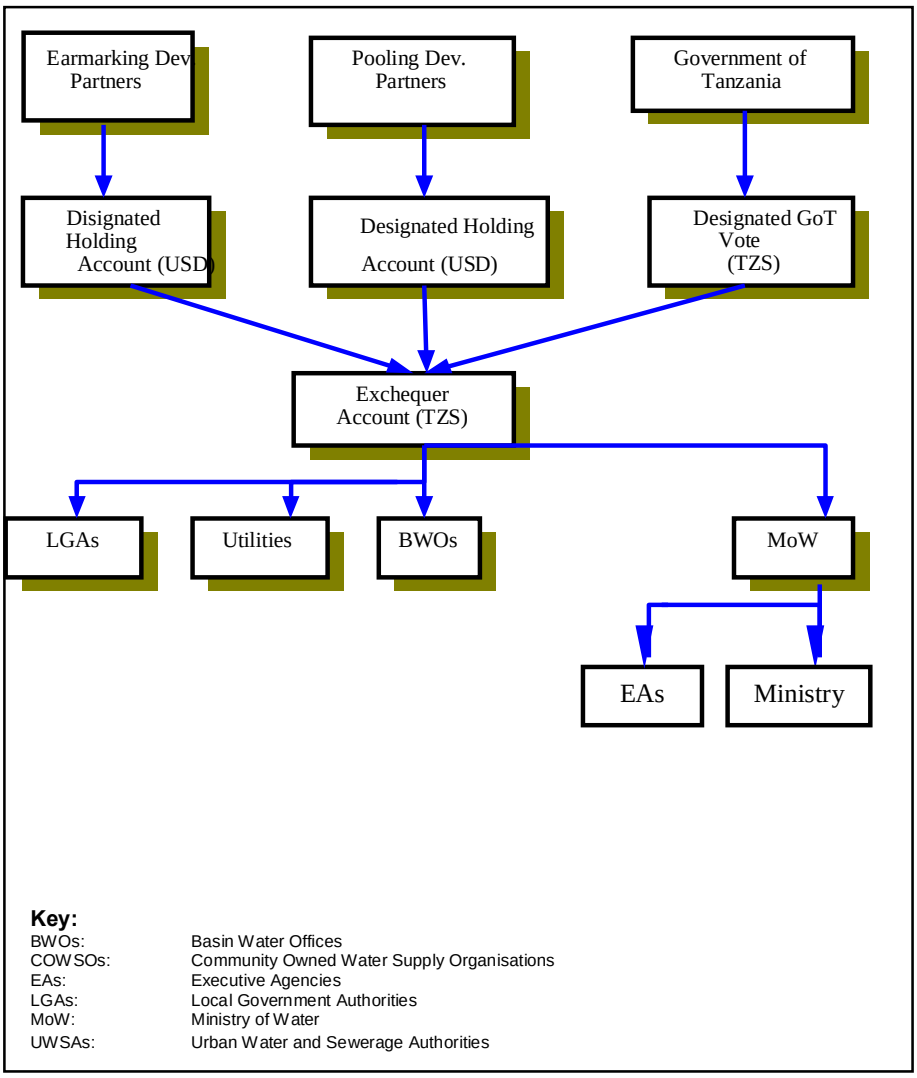
- government financial contribution in the form of seed money;
- contribution from local and foreign donors;
- nominal contribution from established water service providers; and
- other sources to be approved by the government.

Channelling of Funds

Tanzania has reviewed the policy environment governing water resources and water supply, which now favours environmental sustainability of water bodies and operational sustainability of water schemes. Participatory integrated principles in water resources planning, development and watershed management; cost sharing principles that include community/beneficiary participation in planning, construction and meeting the costs of operation and maintenance of rural water schemes; and full cost recovery principles in urban areas with commercial water service regulation by an independent regulatory authority (EWURA) is now adhered to by all implementers. Implementation of various priority interventions is commissioned or done through autonomous institutions that manage projects and are responsible for day-to-day sustainable operations. It is within this context that the required financial resources for implementation of activities under the WSDP will be channelled through the exchequer to these institutions for implementation and accountability.

The main source of financing will be the GoT complemented by resources from development partners. Funds from development partners will be channelled through MoF under the General Budget Support, and then will flow in two folds: first from MoF to programme implementers: the basin offices namely the Basin Offices, LGAs, UWSAs and executive agencies. Secondly, financing of MoWôs monitoring activities will be channelled from MoF to the Ministry. The accountability procedures including the monitoring and reporting will be as specified by the Medium-term Expenditure Framework (MTEF) execution procedures, based on government public financial management acts and other programme implementation operational guidelines. Arrangements for flow of funds are as shown in Figure 6.1.

Figure 6.1: Flow of Funds to Implementing Agencies



Criteria have been developed and introduced with a purpose of assuring more objective, equitable and transparency framework for distribution of financial resources to implementing agencies (LGAs, BWOs, UWSAs and EAs). They have been developed based on sub-sector specifics and will be updated and agreed upon by the Water Sector Working Group as and when necesary. These will facilitate predictability and stability in the financial planning and budgeting processes during implementation of the WSDP. The criteria are further detailed in chapter 7 of the Programme Implementation Manual document.

Water Resources Management

The new policy direction requires autonomous River Basin Offices to manage water resources at basin level through principles of Integrated Water Resources Management, whereby users are compelled to pay water user and water rights fees to contribute to the

respective basin recurrent budget. Funds for implementation of WRM projects will be channelled from development partners to MoF under the General Budget Support, then from MoF to Basins Offices. The accountability procedures including the monitoring and reporting will be as specified by the MTEF execution procedures, based on the governmentôs public financial management acts. Secondly, financing of inter-basin WRM projects and monitoring activities will be channelled from MoF to the Ministry.

Rural Water Supply and Sanitation

Autonomous COWSOs will take the implementation role of rural community projects and day-to-day management of operations and management under the general oversight of the LGAs. Both recurrent and development funds, which are required at the district level for supervision, monitoring and regulation of rural schemes, and implementation of schemes, will be channelled directly from the MoF to LGAs. The allocation will be based on approval by a joint budget committee (MoW, MoF and PMO-RALG) through a formula-based approach.

Urban Water Supply and Sewerage

Autonomous Urban Water Supply and Sewerage Authorities will set water tariff levels for domestic and commercial services with a strategy that is based on the full cost recovery principle through service improvement and billing efficiency. The UWSAs are capable of absorbing the funds for execution of projects in their areas of jurisdiction directly. Channelling of funds for implementation of urban projects will be channelled from development partners to MoF under the General Budget Support, then from MoF to UWSAs. Otherwise, funds for monitoring and technical support will be channelled from MoF to MoW.

Executive Agencies

Autonomous executive agencies will set fees and tariffs for services rendered with a strategy to fully recover all operational and investment costs. Funds for implementation of executive agencies' activities will be channelled from MoF under the General Budget Support directly to the agencies. Otherwise, funds for monitoring and technical support will be channelled from MoF to MoW.

Stakeholder Coordination

The MoW will continue to provide technical support to ensure technical professional standards are adhered to through monitoring and financial mobilisation support to LGAs, BWOs, executive agencies and UWSAs, as well as coordination of sector development activities. These are functions requiring a substantial portion of the water sector budget through MTEF and annual budget as part of sector allocations and disbursements from MoF to MoW.

The coordination framework for proper planning, financing and information sharing among water sector stakeholders is being improved within the JAS/PFM/PAF auspices that embed SWAP principles. The Ministry of Water and the lead group of development partners financing the water sector have formed a joint committee, which meets regularly to share information, oversee implementation of both sector reforms and sector development programmes. It prepares the agenda and various sector reports for discussion and consensus on the way forward at the annual Joint Water Sector Review. This is a cohesive framework that permits the various institutions to work together towards a common understanding for proper execution of the sector development strategies and programmes that are geared to

addressing the outstanding challenges facing the Water Sector in the roadmap towards achieving both the international (MDGs) and national targets (Vision 2025, MKUKUTA and Sector).

7. SOCIO-ECONOMIC AND ENVIRONMENTAL ANALYSIS

Ideally, a nationôs development should be people-centered, based on sustainable and shared growth and be free from abject poverty. Improvement of quality of life and social well-being depend on the provision, affordability and access to quality food and services like education, health, water, HIV and AIDS prevention and social protection programmes. In addition, life is improved for people who are living in a clean protected environment.

For Tanzania, this development means that the creation of wealth and its distribution in society must be equitable and free from inequalities and all forms of social and political relations, which inhibit empowerment, and effective democratic and popular participation of social groups (men and women, boys and girls, the young and old and the able-bodied and disabled persons) in society. The Water Sector Development Programme provides a good basis for the development of a Sector Wide Approach for rural and urban water supply and sanitation, as well as water resources management in Tanzania.

The main beneficiaries of the Water Sector Development Programme are the people in all areas of Tanzania who are currently poorly served with domestic water supply and sanitation. At the same time, those who are involved in the process of WSDP implementation will in various ways benefit from the intervention. There are a number of social, economic and environmental benefits to be accrued from the programme.

7.1 Social Analysis

Tanzania is one of the fastest urbanising countries in the world. At present growth rate, half the entire population will live in cities by 2025 but without the economic base to sustain it. The living conditions are made worse for such households due to lack of access to water, sanitation and other services. Weak governance and a lack of resources seriously hamper local authoritiesô capacity to perform. With such social and economic constraints experienced by a wide range of the target communities especially the most vulnerable ones, it is likely that the development and sustainability of the water supply systems and sanitation in the target areas will, to some extent, be adversely affected. Therefore WSDP will design workable strategies to ensure that its desired goal of poverty reduction through improved access of water supply and sanitation focuses especially on the poorest and most vulnerable groups.

Studies to understand the social impacts related to the social variables of the community around water basins will be conducted in detail prior to extraction of water. Under WSDP, potential impacts of construction and operation of dams, well fields, treatment plants and pipelines will also be examined. The assessment will involve stakeholder contact and review of academic and research literature to provide a thorough framework for understanding the impacts of the proposal on the community. Results of the environmental studies and modelling of the aquifer under specified areas of environmental impact under a worst case scenario will be critical inputs.

The Water Sector Development Programme will benefit all the population in terms of provision of adequate domestic water supply and sanitation services as well as availability of water resource for different uses. In order to achieve MKUKUTA targets, 12.6 million more people will have access to improved water supply by 2010 and 11.5 million more people by 2015. By 2025, a further 24.7 million will have access to improved water supply services.

There are a number of social, economic and institutional benefits to be accrued from the programme, including to:

- contribute towards the National Strategy for Growth and Reduction of Poverty (NSGRP),MDG and Tanzania Vision 2025 initiatives of reducing poverty and improving the health conditions of all Tanzanians;
- support the decentralisation policy by strengthening the capacity of BWOs, UWSAs, executive agencies and LGAs to manage water and sanitation development initiatives;
- enhance participation of communities, private sector and the civil society organisations, which are identified by the National Water Policy (NAWAPO) as the key water sector partners;
- address needs of all social and economic groups such as women, men, the marginalised, livestock keepers and crop farmers, peri-urban and rural populations, and empower women and other marginalised groups by involving them in the management of the water resources;
- solve potential conflicts of interest between various water users;
- reduce the distances to get water for both domestic and livestock use, which will substantially increase the opportunities for both men and women to engage in other socio-economic occupations;
- offer opportunity for both men women to discuss social issues such as gender inequalities, outdated traditions and customs, inequitable distribution of family resources, HIV/AIDS, etc. that will gradually introduce a more equitable distribution of power and resources among men and women and the marginalised groups in the community;
- increase awareness on HIV/AIDS and consequently planning at individual, household and community levels on how to prevent and control it; and
- reform all social relations and processes, which manifest and breed inequality, in all aspects of the society with regard to water resources management and provision of water and sanitation services.

The programme seeks to ensure these benefits are attained within the existing social, economic and cultural dimensions in the target areas. It is essentially about analyzing the potential effects (positive or negative) on the implementation and sustainability of the proposed WSDP. Such knowledge is important if any mitigation measures are to be determined so that the target population can be able to accrue any benefits.

7.2 Economic Analysis

The economic analysis builds on the project financial analysis, which measures the flows of costs and benefits in adjusted market prices based on a total water sector investment programme. The financial analysis focuses on costs and revenues to the enterprise in constant financial terms whereas the economic analysis compares benefits to costs to the economy as a whole in constant economic terms. Economic prices reflect the true cost and value to the economy of goods and services after adjustment for the effects of government intervention and distortions in the market structure.

Future benefits and costs are discounted to arrive at net present value, which reflects the time value of money. They include non-monetised benefits and costs. The Net Present Value (NPV) is computed by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits. Discounting benefits and costs

transforms gains and losses occurring in different time periods to a common unit of measurement.
The Economic Internal Rate of Return (EIRR) is the rate of return for which the present value of the net benefit stream becomes zero, or at which the present value of the benefit stream is equal to the present value of the cost stream. By definition the EIRR is the rate of discount when the net present value of the project is zero.

7.2.1 Water Resources Management

Water resources touch all spheres of life and involve every individual as a social and an economic good. Population growth as well as economic growth naturally increases the demand for water for various uses including domestic, industrial, agriculture, mining, livestock, and power supply and this translates into increased competition for water, increasing pollution, land degradation and other stresses on the water resources. Yet there are no effective allocation criteria for water users and the current granting of water rights and discharge permits fails to take into account the need to maintain minimum flows and quality standards within river basins and catchments. The effective water allocation and monitoring of water use is hampered mainly by ineffective procedures for levying and recovering water charges among others.

NAWAPO requires that allocation of water for basic human needs receive highest priority, and other uses will be subject to social and economic criteria. Water for protection of the environment and eco-systems will be reserved. In this regard, water allocation procedures and guidelines will be introduced for prioritising and granting time limited water rights and discharge permits. Likewise, detailed criteria for water allocation will be developed taking into account all social, economic and environmental criteria on a case-by-case basis. NAWAPO also aims to generate revenues through user fees for financing water resources management and the use of economic analysis instruments to manage the use of the water resources.

Three issues are to be addressed: a) the increasing economic value of water over time to the different economic sectors in Tanzania; b) the water use efficiency implications of adopting different fee structures; and c) potential water-user revenue generation. Both (a) and (b) have impact on (c). That is, the more the economy grows, the more water is valued, and the more demand-sensitive rate structures are adopted, the more the potential growth in water-user revenues.

The major water uses that determine the aggregate economic value of water in the various basins in Tanzania are: Irrigated Agriculture, Livestock, Energy (Hydropower), Domestic (Urban & Rural) Water Supply, Industry and Mining, and Fisheries (rivers, lakes, and man-made fishponds). The economic essence of each is narrated below:

(i) Agriculture (Cropping)

Value of Water for Irrigation

Rice produced from Usangu accounts for 14 percent of total domestic rice production, ranging between 60,000ï 80,000 tons. It is valued at $16 million and provides some 30,000 households with an estimated $3.12 per day over the year. This income is vital for lifting many people out of poverty in this area, and is central to supporting a total population of 750,000 people in the region. This production extracts some 576Mm3 of water, [meaning that water has helped generate a gross market] the value of which is $0.027 per cubic meter

extracted.[37] This project demonstrates the economic value of water for enhancing peoplesô incomes, which then extends the benefits to poverty reduction through various benefits including financing for social and economic services as pre-requisites for family and community development. Irrigation projects are normally accepted when the EIRR is above 10%, but when large fixed investments are included like construction of large dams, EIRR of up to 6% lower are considered viable.

(ii) Energy

The economic value of water for hydropower production in Tanzania can be estimated from the economic losses that arise. The reduced power availability and its unreliability cause considerable economic losses to domestic users, especially the hotel industry, business, manufacturing, and industry. In 1997, the overall rate of economic growth dropped to 3.3 percent from 4.2 percent in the previous year, largely as a result of electricity shortages. The resulting loss of confidence by industry and manufacturing had perhaps even greater long-term effects than did the direct production losses.[38] To avoid load shedding during the 2003/04 drought, TANESCO obtained emergency assistance from GoT to cover the cost of imported fuel and energy purchases. Without the assistance, it was estimated that TANESCO would have shed about 891 GWh between March and December 2004, equivalent to about 27 percent of projected energy requirements in 2004, or $55 million in lost revenues. The cost of this un-served energy to the economy was estimated to be as high as $550 million, or six percent of GDP.[39] Although the hydro-power projects can be considered low cost technologies in the energy sector and hence high EIRR, in normal circumstances the investments done compared to the social benefits lowers the EIRR down to the extent of 5%.

(iii) Fisheries

The fishing industry in Tanzania is growing rapidly and contributing significantly to the countryôs economy. The Nile perch from Lake Victoria catch in 2001 alone was 220,000 tons, worth $90 million in export earnings accounting for about 11 percent of export earnings. The export trade in Nile perch fillets is not affected by drought; but it is affected by water quality. The Nile perch ban by the European Union (EU) in 1999 resulting from bacteriological contamination of the perch resulted into in an estimated loss of $63 million to Tanzania. Organics and heavy metals have a tendency to bio-accumulate in the food chain. The long-term impact of weak enforcement of agro-chemical or mining residues and their associated economic loss cannot be ignored. The projects that involve direct fishing from the water bodies have a relative higher EIRR (above 12% acceptance level), compared to fish-farming ponds, which takes longer in nursing the fish plants, hence consideration of the EIRR can be as lower as 6%.

Alternative Water User Tariff Structures

The water user fee (WUF) will eventually be the most important source of revenue for the Basin Water Offices to finance their regulatory as well as operational functions. On the other hand, the WUF acts as a price regulator on the use of water. Its design and setting should lead to efficient water allocation. There is the potential to increase both water use

[37] *Source:* http://swmrg.suanet.ac.tz/Riparwin.htm.
[38] Inadequate electricity supply is considered one of the major constraints faced by industry in Tanzania, and is also a major impediment to the start-up of new businesses. *(See:* Draft 2004 Investment Climate Assessment).
[39] Memorandum of the President for the Emergency Power Supply Project (2004).

efficiencies and water fee revenues if the WUF structure is properly designed and more accurately reflects the real economic value of water to particular uses in each basin.

The different water pricing methods include:

- *Volumetric:* based on the volume of water consumed;
- *Output:* per output basis;
- *Input:* per certain inputs used;
- *Unit Area:* per unit area, depending upon crop type, technology, etc.(applicable only to irrigation);
- *Tiered pricing:* volumetric above certain levels of water consumption;
- *Two-part tariff:* volumetric and an admission charge;
- *Betterment levy:* per area and increase in value of area (applicable only to irrigation); and
- *Water markets:* price determined in markets for water or water rights.

Additional water use efficiencies are generally attainable whenever the pricing method affects the demand for water use. The volumetric method usually results in the highest water use efficiencies because it prices the scarce resource, the water, directly. The more you use, the more you pay. Pricing schemes which are not tied to the volume of water utilised, such as a fixed per unit area fees, lead to more inefficient water use. Such methods, however, are, in general, easier to implement and administer (and are thus widely employed) since they require only a modest amount of information and do not require water metering.

Collection of water user fees by the nine BWOs in 2005/06 amounted to only about US$ 0.5 million. Fee recovery is still very low and there is, admittedly, still a lack of transparency in the retention of funds at the operational level. Based on the current fee structure,[40] estimated current water use (by sector)[41], expected growth in the overall economy, and some projections regarding improved fee scheduling and collection, it is estimated that fee revenues within 10 years could reach about $US 10 million per annum. Seen in another way, annual revenues would exceed annual costs after the 10th year of the IWRM programme, which would then become self-sustaining.

The most critical variable in the above projections is the efficacy of collection. To achieve the projected revenue stream, all water users must be registered and collection rates must increase about 10 percent per year. If this can be achieved through the currently proposed investment programme, the financial independence BWOs and economic value of WRM will be secured.

A detailed study of revenue options for water resources management would be carried out to review and recommend the use and operational application of the various user charges and levies to finance basin management and operational expenses. During the preparation of the basin plans, basin specific water user charges such as fees, royalities, levies, fines, penalties, remedial costs as well as their structures will be detailed. The revenue options to be explored would include both consumptive uses such as irrigation, industries and non consumptive uses of the water resources such as tourism. In cases where user fees, charges and levies prove to be inadequate, recommendations will be made to ensure that the appropriate level of budget support as specific line items is in place especcilly to meet investment requirements for IWRM.

[40] Based on **The Water Utilisation (Control and Regulations) Act, 1974, amended 2002.** Initial application fees (which range from $35 to $130 per application) are not incorporated into the analysis..

[41] Present water use estimated from **The National Irrigation Master Plan, Main Report,** Ministry of Agriculture and Food Security, Dar es Salaam, 2002, p. 6-3. These estimates are probably low because the current population is higher (+4M) and the current area irrigated is also higher (+35,000 ha.)

7.2.2 Water Supply and Sanitation

In determining the economic viability of a project both the benefits and costs are identified and quantified. They are then valued in monetary terms and finally, the EIRR is estimated through the NPV of costs and benefits. A 12% EIRR is usually considered a minimum rate of return for an economically viable project; however, for projects with considerable non-quantifiable benefits such as rural water supply projects, 10% is often acceptable.

The valuation of the benefit stream of the rural water supply project is difficult to estimate. In the RWSSP analysis, the primary benefits are the time savings in the collection of water. Difficulty in estimating the monetary value of improvements in health, capacity building, and social and gender effects resulted in their omission. Although difficult to quantify, these benefits are substantial and cannot be ignored. By omitting them, the economic analysis is conservative resulting in a lower figure than the true value of the EIRR. Fortunately, well-designed rural water supply projects are typically quite viable economically, especially where existing water coverage is low and collection distances are long such as in Tanzania. Even with the omission of health and social benefits, the EIRR values are commonly well above the required 10%.

Two villages in each of three representative districts were selected for economic analysis. To gain even greater accuracy and focus, economic comparisons of potential water supply technologies were made to provide EIRRs for several technologies under a range of conditions in the six villages and three districts.

The analysis was carried out in the districts of Kilosa, Mpwapwa and Rufiji representing a wide range of conditions existing in Tanzania. It began with the collection of secondary data, a socio-economic household survey and a study of water supply in the six villages.

All had EIRRs of 11% and higher with the exception of one technology in Kilosa District. This was the protected spring. This was due to the protected spring not reducing collection time. It was concluded that, wherever feasible the protected spring water should be piped closer to the user population, thereby becoming a small gravity fed piped scheme.
Gravity-fed piped schemes were found to enjoy EIRRs higher than 30% as a result of reduced collection time and operation and maintenance costs. Also of interest is the hand dug wells with hand pumps that have EIRRs above 20%; this being a result of their low investment and O&M costs.

7.3 Environmental Considerations

The WSDP will trigger three safeguard policies, namely Environmental Assessment; Involuntary Resettlement; and International Waterways. The Environmental and Social Management Framework (ESMF) provides a strategic guide for the integration of environmental and social considerations in the planning and implementation of the WSDP activities including issues related to International Waterways. The Resettlement Policy Framework aims to protect impacts due to involuntary resettlement from implementation of the WSDP activities. The policy requires that the implementation of individual resettlement and compensation plans are a prerequisite for the implementation of programme activities causing resettlement to ensure that resettlement and compensation are in place.

Institutionally, NEMC under the Vice Presidentôs Office is responsible for the EIA process. Projects requiring EIAs will require registration with the NEMC.

7.3.1 Water Resources Management

An environmental analysis of the water resources management component of the programme has not yet been carried out, however its principal environmental benefits are summarised as follows:

- reduction of the impact of periodic droughts, by improving water supply and storage, and by contributing towards the stabilisation of agriculture;
- improved quality of water supplies for various users, particularly domestic water supplies, with resulting improvements in public health;
- improved land management and crop production, by enabling the adoption of irrigation and reduction of soil degradation;
- enhanced wildlife biodiversity, by protecting habitats and improving aquatic and terrestrial conditions; and
- stabilised electricity generation encouraging a reduction in the use of fossils fuels and in tree cutting.

7.3.2 Rural Water Supply and Sanitation

The WSDP is national in scope, encompassing a wide variety of ecosystems and ecological conditions throughout Tanzania. In terms of environmental assessments, rural water supply and sanitation programmes are classified as Category B. Typically, having limited environmental impact, such projects are subjected to an environmental screening (using a check list) at the planning or appraisal stage, with only larger sub-projects, or those likely to have significant potential negative impacts, requiring a more detailed Environmental Impact Assessment (EIA).

It is anticipated that few of the RWSSPôs sub-projects will be categorised as requiring an EIA, although multiple sub-projects within a district will require an overall district EIA.

Of environmental concern will be:

- localised land degradation that may be caused during construction activities. Appropriate remedial measures will be needed to restore the land after construction;
- the potential for increased density of human settlements and livestock, particularly adjacent to domestic water points and charco dams. This may accelerate local land degradation. Monitoring will be required to ensure that degradation associated with improved water supplies is controlled through remedial measures; and
- the maintenance of water quality. Testing for chemical and bacteriological contaminants and keeping pit latrines and animal wastes a safe distance from water sources will be necessary. Water should be tested for bacteria at the planning stage, at the completion of construction, and regularly thereafter.

Potential negative environmental impacts of the typical rural water supply and sanitation sub-projects can be monitored using three simple tools: an environmental checklist used at the appraisal stage; a mitigation plan matrix to guide the construction and facilities operation; and monitoring indicators over the long term.

7.3.3 Urban Water Supply and Sanitation

Water supply services in urban areas result in a production of wastewater estimated at about 80% of water supplied. Common methods of disposal of public wastewater are through septic tanks and pit latrines. The wastewater so disposed is haphazardly discharged leading

to contamination of groundwater sources and the environment. Entities shall be required to ensure proper collection and disposal of sewage.

Most existing industries were established without wastewater treatment facilities. In some instances, industrial wastewater contains toxic substances or biological process inhibitors. Industries shall establish pre-treatment facilities to treat their wastewater before discharging into public sewerage system. UWSS entities shall conduct own regular chemical and bacteriological tests of the raw sewage to control toxic and offensive substances from being discharged into the treatment plants.

8. INSTITUTIONAL ARRANGEMENT

The National Water Policy 2002 has prescribed new roles for different players in water resources management and provision of water supply and sanitation services. The policy guide in NAWAPO is based on six key principles: the Governmentôs role being be limited to coordination, policy and guideline formulation and regulation; regulatory and executive functions will be decentralised to the lowest appropriate level, while balancing consumer representation/participation with economies of scale; responsibility for regulation will be separated from the prioritisation and allocation of capital investment funds; autonomous entities will be established to manage water supply and sewerage services in urban areas; and community organisations will own and manage water supply schemes.

Equally important, the institutional framework for water resources management has been streamlined to meet the challenges of effective integrated water resources management. In both cases, roles and responsibilities of different players shall be clearly defined so as to ensure their effective participation.

This shift in policy direction calls for adoption of a more effective institutional framework for the provision of water and sanitation services to urban and rural population. The implementation of decentralisation is a slow and complex process. It demands considerable technical and financial resources at national, basin, UWSA and LGA levels. Also, although the policy and overall strategy is clear, stakeholders perceive many risks, both real and imagined, and there is considerable resistance to the changes at the technical level. Nevertheless, the MoW has made considerable progress in the decentralisation of water supply and sanitation services delivery.

The role of central government, through the Ministry responsible for Water, will be that of co-ordination, support and capacity building, monitoring and quality assurance, policy and guideline formulation, regulation and ensuring that water services are provided to the public. The responsibilities for the provision of water supply and sanitation services will need to be transferred to successor organisations. The LGAs will have responsibility for public service provision including water and sanitation in the future; local authority staff will be de-linked from their respective ministries.

The new WSS and WRM institutional frameworks are based on the following principles:

1. Responsibility for the provision of water supply and sanitation services is to be held by local government authorities.
2. Clustering of water supply and sanitation services under the responsibility of adjacent local government authorities is aimed at commercial viability.
3. Legal transfer of assets to water and sanitation entities should be done while ensuring that communities are protected against confiscation and asset stripping.
4. Capital investment financing, and operational support through local government should be separated from regulation and performance monitoring.
5. Tariffs should be linked to performance as part of the regulatory function.
6. Water basins should be transformed into autonomous bodies.

8.1 Water Resources Management

8.1.1 Institutions in WRM

National Water Board
The National Water Board (NWB) will be an advisory board to the Minister responsible for water primarily on matters related to multi-sectoral coordination in integrated water resources planning and management as well as resolution of national and international water conflicts. The NWB will also advise on matters related to inter-basin water transfers, trans-boundary water resources management, and resolution of inter-basin conflicts, and will be accountable to the Minister responsible for water.

Basin Water Boards
The Basin Water Boards will be financially and administratively autonomous, and financed from water user charges. The Boards will employ the staff necessary to carry out all of the Boardôs functions and responsibilities, and will be accountable to water users in the respective Basins through institutions that will be designated by Minister responsible for water, consistent with Government policy of decentralization by devolution.

Catchment and Sub-catchment Committee
The Catchment and Sub-catchment Committees will be autonomous bodies, financed from user charges, and will carry out such functions as are delegated by the Basin Water Board. They may employ staff necessary to carry out these functions, or may be supported by Basin Water Board staff.

Water User Associations
Water User Associations will be legally constituted bodies drawing their membership from water users in a particular locality. They may need to employ a few staff in order to carry out the limited functions at the local level and the costs of the Association will be borne from charges levied on its members.

The institutional framework for water resources management is set out in Figure 8.1 and the main functions and responsibilities of each organisation in the framework will be as follows:

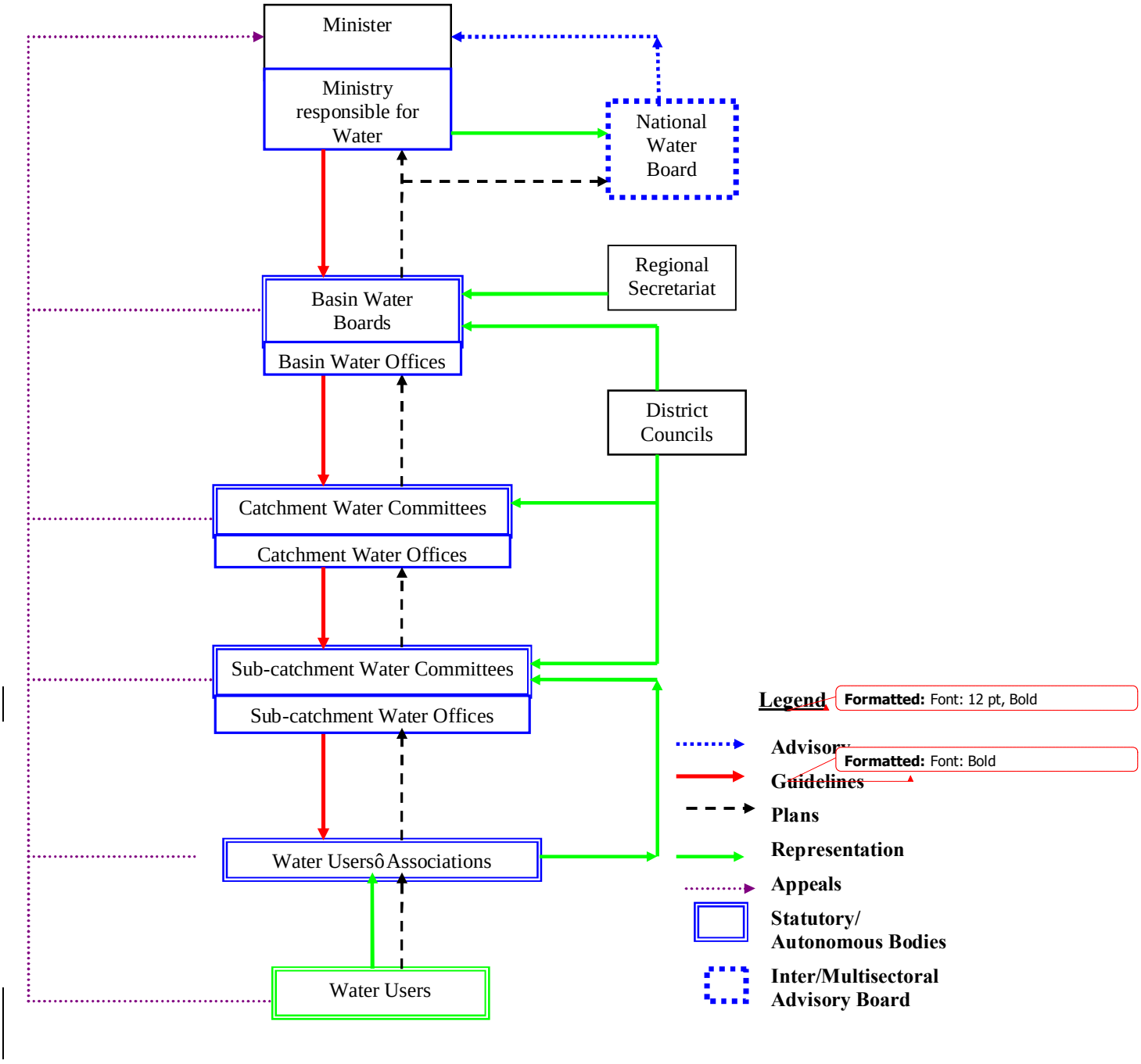
Table 8.1: Functions and Responsibilities for Water Resources Management

Organisation	Functions and Responsibilities
Minister responsible for Water	Presents national policy and strategy to the Government. Ensures policies and strategies are implemented. Appoints Chairman and members of Basin Water Boards. Determines appeals from all levels in framework.
Ministry responsible for Water	Sectoral co-ordination, monitoring and evaluation. Policy development and review, including legislation and financing. Formulates technical standards and WRM guidelines. Co-ordinates trans-boundary water issues. Ensures dam safety. Water Quality Monitoring. Development of water resources of national interest. Co-ordinates data collection and assessment of water resources.

	Supervises, monitors and evaluates Basin Water Boards. Supervises the Water Resources Institute. (Agency). Supervises the Drilling and Dam Construction Agency.
National Water Board	Advises the Minister on: - Integration of inter-sectoral planning. - Co-ordination of basin planning and management. - inter-sectoral / inter-basin conflicts. - investment priorities and financing patterns. - interbasin water transfer - transboundary water resources management

Basin Water Boards	Data collection, processing and analysis for WRM monitoring and resource assessment. Co-ordinates technical aspects of trans-boundary issues in the basin. Co-ordinate and approve basin WRM planning / budgets. Approve, issue and revoke water use and discharge permits. Enforce water use permits and pollution control measures. Co-operate between sectors at the local level. Resolve conflicts and co-ordinate stakeholders. Integrate district plans
Catchment / Sub-catchment Water Committees	Coordination of catchment/sub-catchment integrated water resources management and planning. Resolution of water resources conflicts in the catchment/sub-catchment, and other delegated responsibilities from Basin Water Board.
Water User Associations	Manage allocation of water resources at local level. Manage equitable allocation of resources during drought. Mediate in local disputes.
Regional Secretariat	Representation on Basin Water Boards.
District Councils	Representation on Basin Water Boards. Representation on Catchment Committees. Formulate and enforce bylaws Promote efficient water utilisation Preparation of district plans

Figure 8.1:Institutional Framework for Water Resources Management



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8.2 Water Supply, Sewerage and Sanitation

With the role of Government, through the Ministry responsible for Water, changing to that of co-ordination, policy and guideline formulation, and regulation, current responsibilities for the provision of water supply, sewerage and sanitation services will need to be transferred to successor organisations. Based on the NAWAPO, six basic principles have been derived and applied to the development of the new institutional framework for water supply and sewerage:

1. Governmentôs role will be limited to co-ordination, policy and guideline formulation, and regulation.
2. Regulatory and executive (i.e. service provision) functions will be separated.
3. Responsibility for executive functions will be decentralised to the lowest appropriate level, whilst balancing consumer representation/participation with economies of scale.
4. Responsibility for regulation will be separated from the prioritisation and allocation of capital investment funds.
5. Autonomous entities will be established to manage water supply and sewerage services in urban areas.
6. Community organisations will own and manage water supply schemes.

Under the Local Government Reform Policy, local governments will have the future responsibility for public service provision including water; local authority staff will be de-linked from their respective ministries; and line ministries will change their role into policy making, support and capacity building, monitoring and quality assurance, and regulation.

To develop a institutional framework for water supply, sewerage and sanitation services that are in line with both of these policies, a number of key features have pointed to the way forward:

1. The new framework must reflect the overall responsibility for the provision of water supply, sewerage and sanitation services by local government authorities.
2. Local government authorities are currently weak and require adequate support and capacity building.
3. Sanitation services will be the responsibility of the local government authorities in consultation with the Ministry responsible for Health.
4. Clustering of water supply and sewerage services under the responsibility of adjacent local government authorities is essential if commercial viability is to be achieved.
5. The functions of the regulator in respect of commercial schemes are different to those of community owned and managed schemes.
6. Assets can legally be transferred to water and sewerage entities and communities, but must be protected against sequestration and asset stripping risks.
7. Capital investment financing, and operational support where necessary, through local government structures is supportive of government policy, but should not be through the same institution responsible for regulation and performance monitoring.
8. Tariffs should be linked to performance and be part of the regulatory function.

8.2.1 Institutions and Their Status

The institutions for the provision of water supply and sewerage services are of two types: commercial Water Supply and Sewerage Authorities (WSSAs); and Community Owned Water Supply Organisations (COWSOs). Regulation of the WSSAs will be by the Energy

and Water Utilities Regulatory Authority, while regulation of the COWSOs will be by the Ministry responsible for Water, but delegated to local authorities.

Water Supply and Sewerage Authorities

The Water Supply and Sewerage Authorities (WSSAs) will be financially autonomous statutory organisations, to be established based on the commercial viability of providing these services in a designated area. This may require clustering of water supply and sewerage responsibilities across a number of local government authority areas so as to promote and achieve commercial viability. Therefore, regulation would only be required for a limited number of WSSAs.

Water supply and sewerage assets would be transferred to the WSSAs in order to provide balance sheet equity as a guarantee for loans from the Government and development partners or other sources. Each authority may either provide the services themselves or could contract a Service Provider (public or private) to provide the services.

Clustering of water supply and sewerage authority responsibilities can be based either on regional and local government boundaries, or on river basins, depending on criteria such as the number of local government authorities involved, potential viability, social or cultural factors, and geographical proximity.

Service Providers

Service Providers may be responsible for providing water supply and sewerage services on behalf of the WSSAs under varying contractual arrangements, such as service, management or lease contracts where this is efficient and cost effective to do so. More than one Service Provider may be engaged by each WSSA, depending on the circumstances.

A Service Provider may be a company established by one or more LGAs for this purpose, which would be in line with the principle of decentralisation under the Government Reform Policy, or may be from the private sector, or may be a Non-government or Community Based Organisation.

The service providers will also participate in construction of water sector infrastructures, consultancy services, supply of goods and in training of communities in water related aspects such as formation of legal water entitites etc.

Community Owned Water Supply Organisations

Community Owned Water Supply Organisations (COWSOs) will be bodies legally constituted by a community to own, manage, operate and maintain the water supply systems on behalf of the community. These bodies may take various legal forms, such as Water Consumer Associations or Water Consumer Trusts, and establishment of the COWSOs will be promoted through the local government framework of district and village councils.

The COWSOs will be expected to meet all the costs of operating and maintaining their water supply systems through charges levied on water consumers, and to contribute to the capital cost of their systems. The main source of capital investment will be through the system of block grants to district councils.

The COWSOs may contract part or all of their operation and maintenance responsibilities to private companies or individuals, or to Non-government Organisations.

Performance monitoring and regulation of COWSOs will be the responsibility of the Ministry responsible for Water, but delegated to the district councils.

Energy and Water Utilities Regulatory Authority (EWURA)

EWURA has been established under the Energy and Water Utilities Regulatory Act, 2001, to regulate *inter alia* the provision of water services. EWURA will be responsible for issuing licences to WSSAs, based on the submission of business plans, and for monitoring and regulating performance of the WSSAs against the business plans. This will include the approval of tariffs for water and sanitation services based on the performance of the WSSAs in delivering services to consumers.

As the business plans of the WSSAs will be required to include the performance related contractual arrangements with their Service Providers, the WSSAs will have responsibility for the management of these contracts and EWURA will not be required to separately regulate the Service Providers.

8.2.2 Functions and Responsibilities of Institutions

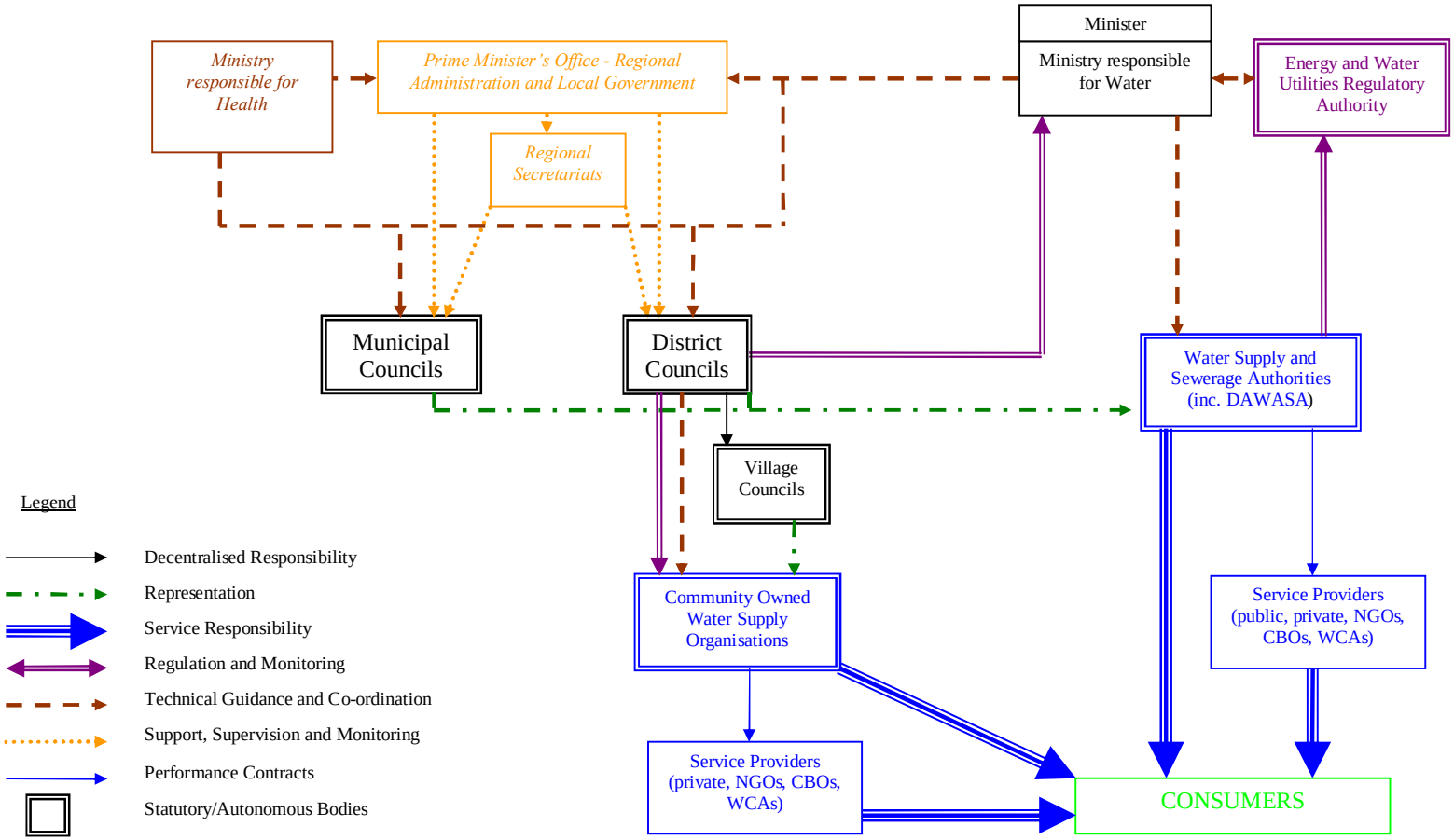
The new institutional framework for the provision of water supply, sewerage and sanitation services is set out in Figure 5.2 and the main functions and responsibilities of each organisation in the framework will be as follows:

Table 8.2: Functional Responsibilities for Water Supply, Sewerage and Sanitation

Organisation	Functions and Responsibilities
Minister responsible for Water	• presents national sector policy and strategy to Government; • ensures policies and strategies are implemented; • appoints chairman and members of the WSSAs boards; and • appoints chairman and members of the EWURA board
Ministry responsible for Water	• policy and strategy development; • advises EWURA in formulation of technical guidelines and standards; • co-ordinates planning for projects of national importance; • secures finance for projects of national importance; • monitors service performance and regulate COWSOs; • provides technical guidance to Councils; • monitors technical performance of WSSAs and DAWASA; • provides technical support, guidance and monitor major capital works to WSSAs; and • coordinates and monitor WSSAs plans.
Water Supply and Sewerage Authorities	• own, manage and develop water supply and sewerage assets; • prepare business plans to provide water supply and sewerage services, including capital investment plans; • secure finance for capital investment, and relevant subsidies; • contract and manage Service Providers; and • provide services not contracted out.
Service Providers	• provide water supply and sewerage services in accordance with contractual requirements; • collect revenues for services; • Construction of water sector infrastructures;

Organisation	Functions and Responsibilities
	• Provide Consultancy services; • Supply of goods; and • Training of communities in water related aspects.
Community Owned Water Supply Organisations	• own and manage water supply assets; • operate and maintain water supply assets; • determine consumer tariffs; • collect revenue for the provision of services; and • contract and manage Service Providers.
Energy and Water Utilities Regulatory Authority	• approves business plans of WSSAs; • issues operating licences to WSSAs; • approves service tariffs; • publishes technical guidelines and standards; • monitors water quality and service performance of WSSAs; and • collects and publishes comparative performance data.
Prime Minister's Office - Regional Administration and Local Government	• co-ordinates planning of projects from local government authorities; • co-ordinates local government authority budgets; and • co-ordinates capacity building for local government authorities.
Regional Secretariat	• representation on WSSA Boards; • provides technical advice and support to local government authorities; and • supervises and monitors local government authorities.
City, Municipal, Towns and District Councils	• provide representation on WSSA Boards; • co-ordinate WSSA plans within Council plans; • delegate performance monitoring and regulation of COWSOs; • delegate technical performance monitoring of WSSAs; • provide and/or promote on-site sanitation; and • formulate by-laws concerning water supply and sanitation.
Village Councils	• promote establishment of COWSOs; • provide representation on COWSO management body; • co-ordinate COWSO budgets within Council Budgets; • resolve conflicts within and between communities; and • formulate by-laws concerning water supply and sanitation.
Ministry responsible for Health	• develops policy, guidelines and strategies for sanitation; • provides technical assistance to councils for sanitation; • prepares Acts, Regulations and Standards for sanitation; and • monitors, regulates and provides support and advice to councils and other stakeholders on sanitation issues.

Figure 8.2:Institutional Framework for Water Supply and Sanitation Services



9. MONITORING AND EVALUATION

9.1 National M&E Framework

The framework for the M&E system for the WSDP takes into account the existing national framework for monitoring and evaluating progress in poverty alleviation, development and the water sector. This national framework includes a national Poverty Monitoring System, a Development Partnersô Group ï Water Dialogue resulting from the Joint Assistance Strategy (JAS), the JAS M&E system and M&E systems used by development partners.

9.1.1 Poverty Monitoring System

A national Poverty Monitoring System (PMS) for Tanzania was established in 2001 and is guided by the principles of the National Strategy for Growth and Reduction of Poverty (NSGRP or MKUKUTA). Cluster II of MKUKUTA deals with water and sanitation improvements. PMS is designed to meet information needs of different stakeholders including: policy makers, civil servants, local government officials, CBOs, research and academic institutions, external development partners, the media and the general public. The requirements of the PMS have been taken into account in developing the framework for the WSDP M&E system.

The specific objectives of the PMS M&E are to:

- ensure timely availability of data;
- ensure proper storage, easy access and use by different stakeholders;
- analyse data and disseminate the findings to stakeholders;
- promote evidence-based decision making at all levels through monitoring and an increased attention to evaluation; and
- ensure that targets of global initiatives (e.g. MDGs) to which Tanzania is committed to are integrated into the system and localised.

A Poverty Monitoring Master Plan (PMMP) integrates the targets of the MKUKUTA and the MDGs into the Poverty Monitoring System. It includes a dissemination, advocacy and sensitisation strategy designed to manage inter-sectoral linkages. The PMMP recognises that there must be a mechanism for continuous feedback from the regions, districts, wards, villages, hamlets and *mitaa*.

The PMS has three levels of evaluation. The first deals with the continued production of the Poverty and Human Development Reports (PHDR). Second, additional efforts are put into on-going evaluation mechanisms through Participatory Poverty Assessments and other qualitative assessments. Third, annual progress reports are to be used to prepare a comprehensive review at the end of the MKUKUTA period in 2010.

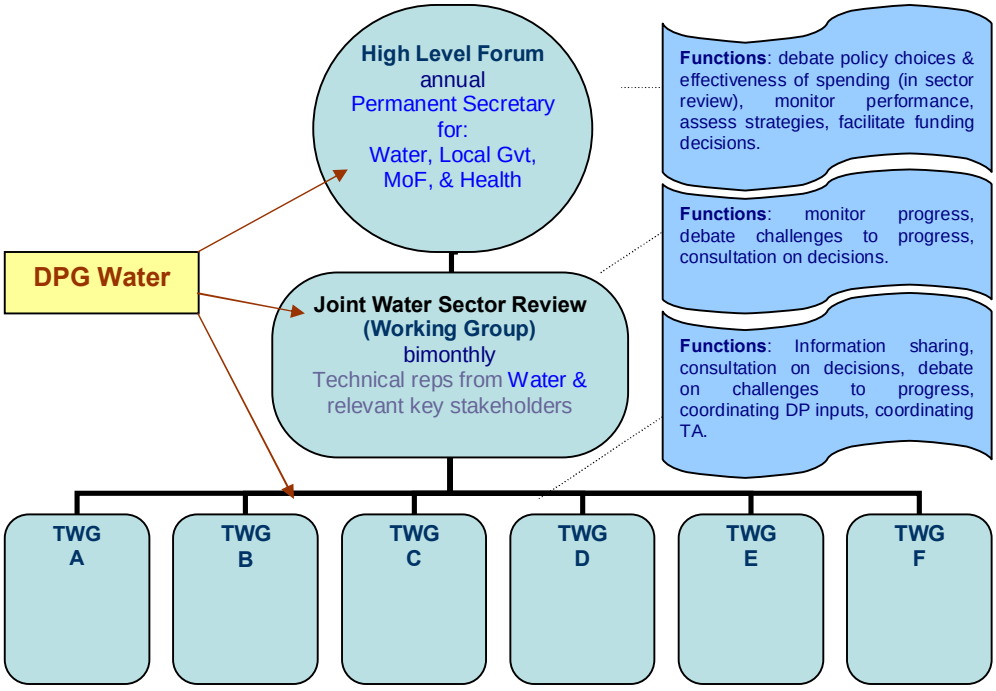
The Water and Sanitation in Tanzania ï Poverty Monitoring for the Sector Using National Surveys Report (2002), concluded that there are inconsistencies in indicators for water and sanitation data being collected by different national surveys, including the Household Budget Survey (HBS), the Demographic and Health Survey (DHS) and the Population and Housing Census. Recommendations have been made with regard to which indicators in each of the surveys are the most useful for analysing long-term trends in the water sector. These recommendations have been taken into account in developing the framework for the WSDP M&E system and the performance indicators for the LFA for the WSDP outlined in Section 3 and Table C1 on Summary of Monitoring and Evaluation Responsibilities.

9.1.2 Joint Water Sector Reviews

Based on the principles of Partnership Framework Memorandum and the Joint Assistance Strategy (JAS) between the Government, and the development partners (DPs) in respect to five-year General Budget Support for MKUKUTA implementation, (DPs) have set up a Development Partnersô Group ï Water (DPG-Water)[42]. The JASôs overall objective is to consolidate and coordinate government efforts and development partners support. The objective of the DPG-Water is improved information sharing, coordination and cooperation between water sector stakeholders. One of its functions is the monitoring and reporting on sector performance. The DPG-Waterôs M&E activities were taken into account in developing the M&E framework for the WSDP.

The structure for the water sector dialogue is based on a High Level Forum, a Joint Water Sector Review (Working Group) and several Technical Working Groups. Each has a specific role with regard to M&E of water sector developments, including the WSDP. The functions of each group are illustrated in Figure 9.1.

Figure 9.1: Water Sector Dialogue Structure



The High-Level Forum is to debate policy choices and the effectiveness of spending, monitor performance, assess strategies, and facilitate funding decisions. It meets annually and comprises of PSs of related ministries as well as senior representatives from all key stakeholders. The High Level Forum is convened by the PS Ministry of Water.

The Water Sector Working Group is in charge of monitoring progress, debating challenges to progress and consulting on decisions. It is chaired by the Permanent Secretary (PS) for

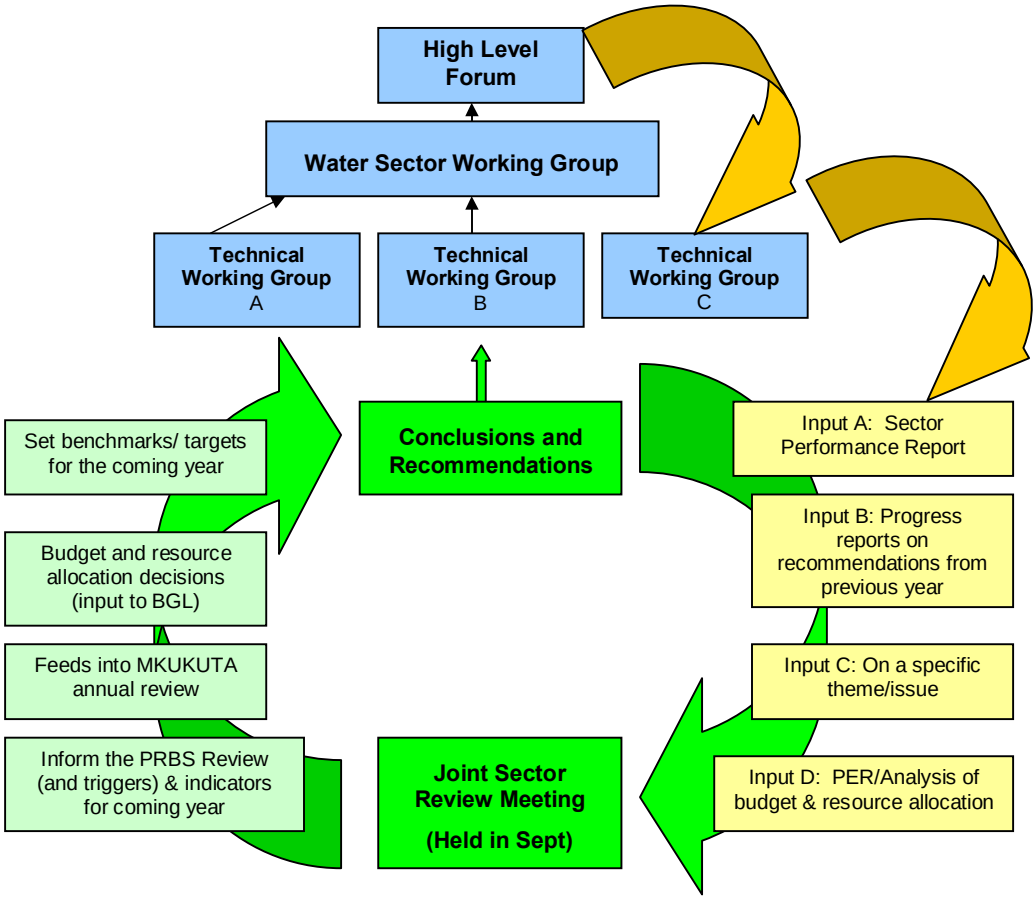
[42] Development PartnersôGroup Water - Proposal for Sector Dialogue, Pippa Bird & Susanne Hesselbarth, KfW/World Bank, 2005.

Water and brings together technical representatives of DPs and non-state actors on a bimonthly basis.

The Technical Working Groups (TWG) are defined around core thematic issues such as Finance, Performance Expenditure Review/Medium-Term Expenditure Framework (PER/MTEF), Dialogue and Coordination, Performance Monitoring, Operation and Maintenance, Sanitation, Water Resources Management, and Capacity Building. The TWGs are to convene qualified representatives from all relevant stakeholders (Government, DPs, civil society) and define their meeting schedule depending on need. TWGs elaborate action plans to respond to the recommendations of the Joint Sector Reviews and inform on priorities for forthcoming Reviews.

The Annual Joint Sector Reviews include assessments of the performance in the sector over the previous year using an agreed upon performance framework and then set targets for performance for the next year. The inputs into the Joint Sector Review from monitoring and evaluation of the sector performance and their impact on the following yearôs activities and targets are illustrated in Figure 9.2.

Figure 9.2: Sector Information Flow



The JAS itself incorporates a framework for M&E which has two major components: one component that deals with annual reports to be prepared by GoT, development partners and ñnon-state actorsò using a JAS monitoring matrix as well as comprehensive mid-term and final review reports; and another component that deals with reports to be prepared by an Independent Monitoring Group, specifically a mid-term and final assessment of JAS with a view to facilitating mutual accountability. The WSDP M&E framework takes into account the information needs of the JAS so that a coordinated effort of information collection and dissemination is optimised.

In addition to M&E requirements associated with the JAS, it is recognised that different development partners for the WSDP will also have their own specific M&E requirements. Every effort will be made to integrate the proposed M&E framework and data gathering/dissemination systems into the M&E structures of development partners to avoid unnecessary duplication of effort.

9.2 Main Entities Involved in M&E

Several government Divisions and other institutions are responsible for undertaking monitoring and evaluation of the various components of the WSDP. The primary role for M&E in the WSDP rests with the MoW through the oversight Water Sector Working Group that will produce an Annual State of the Water Sector Report covering all aspects of the sector. This report will, together with Resources Tracking Studies and Technical and Financial Audits, form the basis of Joint Sector Reviews and input into the Annual MKUKUTA performance reviews.

Key entities performing M&E activities for the WSDP are: The Ministry of Water; BWOs; EWURA; UWSAs/WSSAs; executive agencies and local government authorities. Table 9.1 provides a summary of the foci of M&E activities for each entity. Annex D provides a more detailed summary of M&E activities, including what are to be monitored and evaluated, the frequency of monitoring, methodologies and tools to be used, and anticipated reporting.

Table 9.1: Main Entities Involved in M&E

Entity	M&E Scope	M&E Foci
MoW - Water Sector Working Group	• WSDP in entirety; and • all sub-projects.	• results; • processes; • all aspects of sub-project planning and implementation; and • monitoring of funds from National Water Fund.
Ministry of Water	• WRM sub-projects; • basin water resources; • national water resources • COWSOs; • overall rural water and sanitation sub-projects and services delivery • overall urban water and sewerage sub-projects	• monitoring and evaluation of water boards; • trans-boundary issues; • multi-sectoral issues; • technical issues; • regulatory compliance of COWSOs; • performance of COWSOs; and • technical, quality and value for money issues
Basin Water Offices (BWOs)	• WRM sub-projects; and • basin water resources	• WRM issues and results; • fund flows; • water rights adjudications; and • trans-boundary issues (six Basins).
Energy and Water Utilities Regulatory Authority (EWURA)	• UWSAs; • ; overall commercial water and sewerage services delivery.	• regulatory compliance of UWSAs; and • performance of UWSAs.
Urban Water and Sewerage Authorities (UWSA) or Water Supply and Sanitation Authorities (WSSA)	• urban water supply and sewerage sub-projects; and • overall rural service delivery.	• drinking water quality and quantity; • sewerage extension and O&M; • service levels and coverage rates; • financial management issues; and • sustainability issues.
Executive Agencies (DDCA, WRI, MCS)	• Water supply sub- projects • Overall training of water technicians • Overall service delivery	• service delivery; and • quality training.
Local Government Authorities	• rural water supply and sanitation sub-projects	• drinking water quality and quantity; • service levels and coverage rates; • financial management issues; • sustainability issues; • health, hygiene, sanitation issues; • status of capacity building; and

Entity	M&E Scope	M&E Foci
		• gender equality issues.

9.3 Main Components of WSDP M&E System

The essential components of the M&E framework for the WSDP are: (i) the use of a results-based LFA and PMF and (ii) management information systems (MISs).

9.3.1 Results-Based LFA and PMF

The WSDP results-based management approach to monitoring and evaluation uses the Logical Framework Analysis and associated PMF described in Section 3. The LFA summarises the goal, outcomes, outputs and associated performance indicators for the WSDP. The PMF specifies data sources where information will be obtained for each of the indicators and the frequency of reporting. A Baseline Study is to be carried out at the start of the WSDP to obtain the necessary baseline data for the LFA and PMF. The Baseline Study is a collaborative effort between stakeholders so that information gathering makes efficient use of resources and information is shared by the various entities involved in M&E activities.
A participatory approach will be used to finalise the M&E system. Responsibility for data collection and reporting on the indicators will be clearly defined. The M&E system will look not only at regulatory requirements and indicators required by the GoT and/or development partners, but also indicators associated with Best Management Practices.

The final M&E system design will ensure that maximum use is made of existing data collection and monitoring systems such as the Household Budget Survey, Demographic and Health Survey and Population and Housing Census that are used as part of Tanzaniaôs Poverty Monitoring System. The final M&E design will also take into account the recommendations made in technical assessments, audits and evaluations of water sector projects in recent years including several bilaterally funded projects.

For effective M&E implementation, capacity building in M&E is needed by a number of government Divisions and institutions/organisations responsible for the monitoring and evaluation work.

9.3.2 Management Information Systems

The tools for monitoring and evaluating the WSDP include Management Information Systems (MISs). MISs will be used to collect, store, analyse and disseminate information and data on the WSDP sub-projects. Beyond serving the purposes of M&E, the MISs will also be used for networking and information exchange, sub-project management, document retrieval and general planning, management and financial tracking activities. This

powerful monitoring and management tool will be available at the district, basin, regional and national levels. Inputs will be provided at the local level. The information will be rolled up and summaries available so that up-to-date countrywide reports on WSDP progress will be available as needed.

The general objectives of the management information systems for WSDP are to:

- provide correct and timely information for supporting the implementation, monitoring and evaluation of the WSDP at the village, district, urban, basin, regional and national levels;
- assist managers and decision makers about current and future programme directions; and
- contribute to policy formulation, sector dialogue, standard stetting and quality control.

The key output and outcome indicators for monitoring implementation of the WSDP are as summarised in the table below:

Table 9.2: Output and Outcome Indicators for Water and Sanitation

Output and Outcome Indicators for Water and Sanitation						
	Output indicator	**Measured by**	**Baseline data**	**Outcome indicator**	**Measured by**	**Baseline**
Rural						
Water Supply	• No. of new water points built	MoW	Currently not reported	• % Household using improved sources for drinking water	NBS - Periodically by survey Census, HBS, DHS	42% - 2002 Census
	• % of functional water points	PMO-RALG Monitoring system	Water point mapping surveys			
Sanitation	• No. of new HH latrines constructed	LGAs & MoH annual health reports	Currently not reported?	• % HH using improved sanitation	NBS - Periodically by survey Census, HBS, DHS	tbd 2002 Census: 89%
Urban						
Water Supply	• No. of new HH water connections • No. of new public water points (kiosks)	UWSAs monthly and annual reports	UWASA annual reports	• % Household using improved sources for drinking water	NBS - Periodically by survey Census, HBS, DHS	85% - 2002 Census (Dar 91%) (Other urban 84%)
Sewerage	• No. new HH connections to	UWSAs	UWASA	• % HH using	NBS - Periodically by	tbd

	sewerage system		annual reports	improved	survey Census, HBS,	(2002
Sanitation	• No. of new HH latrines constructed	LGAs and MoH annual health reports	Currently not reported?	sanitation	DHS	Census: Dar 98%, Other urban 94%)
WRM						
Water Resources Management	• No. of new water resource monitoring stations • % of functional water resource monitoring stations • No. of catchments/ sub-basins covered by water resources assessments and Basin Plans • No. of new catchment committees/institutions formed • No. of water bodies with environmental flow studies carried out	MoW - BWO Hydrological year book	MoW annual and quarterly reports	• Status of available water, demand and use by basin • % of water bodies with improved environmental quality	MoW, DHS, NBS-Census	tbd
Schools						
Schools Sanitation	• No. of new sanitation facilities built in schools	LGA & MoEVT annual reports	Current annual reports	% of schools with adequate sanitation facilities	MoEVT/IMIS? On annual basis	tbd

The RWSSP MIS has already been successfully developed and tested for the RWSSP in twelve districts The MIS is designed to be Internet web based and available to all stakeholders. The MIS is part of the planning, management and monitoring system, and incorporates the tracking of performance indicators for RWSS component of WSDP. It is designed to obtain on-the-spot information gathered at the local level. It includes an information storage database, systems for tracking sub-projects, and digitisation of documentation. It is a modular system that will be expanded as required. Training is provided at all levels of users not only on MIS technology but also, where needed, on maximising the use of the Internet for effective communication, information retrieval and information sharing. Lessons learned from the RWSSP MIS will be incorporated into the expansion of the MISs for the RWSSP for all districts in Tanzania.

When developing the MISs for the UWSSP and WRM components, existing systems for data collection and information management will be used to the extent possible. For example, one existing system that will be reviewed will be a database that the MoW has been developing to monitor the performance of the UWSAs using a previously determined set of performance indicators. The MIS systems will include maps showing infrastructure and natural features such as roads, rivers, and water points using a geo-referenced GIS system.

10. BENEFITS, SUSTAINABILITY AND RISKS

10.1 Benefits

The principal benefits of the WSDP will come in the form of sustainable water resources management and improved water supply and sanitation services. By 2015, an additional 24.1 million rural and urban dwellers will have improved water supplies and sanitation/sewerage services. Also, some 4.5 million will benefit through rehabilitation of existing infrastructure. Programme policy and implementation will go a long way to ensure systems and incentives are in place to achieve sustainability of these improvements.

There are several other less tangible but none-the-less important benefits to be gained from the programme. These are:

- advancement towards the MKUKUTA objectives of reducing poverty, improving health and increased economic growth in the targeted communities;
- decentralised governance through strengthening the capacity of the districts and UWSAs to manage water and sanitation development initiatives;
- decentralised governance and strengthening the capacity of the BWOs to manage water resources development initiatives;
- enhanced participation of communities, private sector and civil society organisations, which are identified by NAWAPO as the key water sector partners;
- response to the needs of the broad spectrum of social and economic groups such as women, men, the marginalised, the peri-urban and low-income rural populations;
- empowerment of women and marginalised groups by involving them in the planning and management of the water resources and water supply services;
- opportunities for both men and women to openly discuss social issues such as gender inequalities, outdated traditions and customs, inequitable distribution of family resources, HIV/AIDS, etc. that will gradually introduce a more equitable distribution of power and resources among men and women and the marginalised groups in the community;
- important benefits to health that are sometimes regarded as being more important than time savings in collecting water. These communities all suffer from endemic diarrhoea, dysentery, malaria and periodic typhoid and/or cholera; and
- the provision of new and better water supply facilities closer to family homes save resources previously devoted to the arduous task of collecting water. With improved water supply systems, at least some of that time and energy will go into education, leisure and productive pursuits. Improved water supplies will, in particular, benefit girls and women who bear the brunt of collecting water. It is likely that some of the saved time and energy will be released for increased education of girls who would otherwise have been kept from school for the purpose of collecting the family's water.

Benefits to be realised through the strengthening of integrated water resources management include:

- reduction of the impact of periodic droughts, by improving water supply and storage, and by contributing towards the stabilisation of agriculture;
- improved quality of water supplies for various users, particularly domestic water supplies;
- improved land management and crop production, by enabling the adoption of irrigation and reduction of soil degradation;
- improved economic well being, particularly through improved crop production and employment opportunities;
- enhanced wildlife biodiversity, by protecting habitats and improving aquatic and terrestrial conditions;
- stabilised electricity generation encouraging a reduction in the use of fossil fuels and tree cutting;
- reduction in conflicts over water use, by improved awareness of usersô needs and improved collaboration among various stakeholders in making water resource management decisions;
- empowerment of communities by involving individuals and groups in the planning and management of local level water resources;
- contributions towards government initiatives to decentralise development management to local governments, by building the capacity of BWOs and enabling them to support District Administrations in planning and management of water resources.

10.2 Sustainability

Tanzaniaôs water sector received major ESA investment and technical assistance during the 1970s and 1980s. With some notable exceptions, most infrastructures were not backed by long-term O&M support. Many facilities have fallen into disrepair and have since been abandoned. The key lesson learned is that to achieve sustainability, water supply and sanitation facilities must be owned and managed locally by organisations which are both close to, and accountable to the consumer. Long-term sustainability is only achieved through ownership by the user-community and their assumption of responsibility for long-term management and maintenance. This can only be achieved if the responsible organisation at the community level is trained and empowered, and contributes meaningfully at all stages of planning, design, implementation and long-term maintenance and repair of the facility.

10.2.1 Integrated Water Resources Management

The sustainability of water resources management is enhanced through five principles for sustainability embodied in NAWAPO as follows:

- ***Subsidiary****:* River basins will be the units of operational water resources management. Operational decisions will be decentralised to these basin offices. A Basin Water Board that represents the various water user communities in the basin will oversee each basin office and undertake management actions and decision-making.

- ***Separation**:* Resource management and regulatory functions have been separated from service delivery functions in the revised institutional arrangements.
- ***Comprehensiveness**:* A holistic basin approach is being taken for integrating multi-sector and multi-objective planning and management that minimises the effects of externalities, and ensures sustainability and protection of the resource. A restructured National Water Board will provide oversight of the water offices. The MoW will be responsible for policy issues and provide technical support to the Basins Offices and Boards. Improved coordination with other water-related sectors will be promoted at both national and basin levels.
- ***Sustainability**:* Water resources will be utilised within sustainable limits (safe yields of surface and groundwater and assimilative capacities for discharge of pollutants) to minimise the effects of externalities of investment decisions on water quantity and quality, to ensure the protection of the water resource, and to better incorporate environmental issues such as environmental flows and habitat protection into management decisions.
- ***Economic value**:* Decision-making in the public sector, private sector and in civil society on the use of water will reflect the scarcity value of water, water pricing, cost sharing, and other incentives for promoting the rational use of water. Charges will be introduced for use of raw water for urban supply, irrigation, hydropower generation and other uses, and for issuing licenses for the discharge of pollutants. The income from these water-use levies and pollution discharge licenses will be retained within the basins and used to support costs of managing the basins' water resources sustainably.

10.2.2 Rural Water Supply and Sanitation

Sustainability of WSDP rural component will hinge on five main elements: policy; institutional and legal; financing; system management; and integrated water resource management. A sustainability strategy is required that addresses these main elements in a comprehensive way. The following outlines the key components of a sustainability strategy for this WSDP sub component.

Policy

The NAWAPO reaffirms the principle that sustainability of RWSS services requires that communities take the lead in developing their WSS facilities and be fully responsible for the O&M of their facilities. The private sector will provide support to communities in planning, design, construction and supply of materials, equipment and spare parts. The Government will continue to provide the necessary technical and financial support, as well as coordination and regulation of RWSS development activities. The ESAs and NGOs will also provide financial and technical support. Integration of water supply, sanitation and hygiene promotion will require close collaboration with other actors in the sanitation area of the sub-sector. This new approach requires effective institutionalised linkages between key sector actors, including central government, local government, ESAs, the private sector, NGOs, community-based organisations, and the communities themselves.

Institutional and Legal Arrangement

The revised institutional framework provides for district-based management of planning and implementation of water supply systems in their respective territories, with strong regional level technical support, and the role of sector guidance and facilitation coming from the national level. This framework is in line with GoT decentralisation policy and implementation plans and is considered the most sustainable structure for supporting community management of rural and small town water supply systems, by transferring authority and resources to the lowest appropriate level.

It is essential for sustainability that water user associations (WUAs), COWSOs and UWSA/WSSAs legally own the infrastructure of the water supply system, or at least are legally empowered to manage and operate the infrastructure. In some situations this can be accomplished by their forming legal trusts to own infrastructure; in other cases the district will remain legal owners but by MoU permit the WUA or COWSO to manage and operate the infrastructure on their behalf. They also need to have legal and assured long-term access to their water source through a water rights permit.

Financing

It is expected, based on expressed willingness and ability to pay, that COWSOs will be able to cover direct O&M costs from tariffs and pay for the replacement of parts such as pumps or pipe sections. Major replacements and system rehabilitation and expansion after the design life may require different sources of finance. One mechanism is for COWSOs to surcharge tariff to establish a sinking fund for future replacement/rehabilitation. Their ability to do this will depend on community economic conditions and is not likely to be applicable in every case. Alternately, districts will establish similar funds as part of their budgeting process, placing the amount of annual system depreciation in a separate account.

For future expansion of systems, as for new systems, districts are encouraged to include this as part of overall RWSS planning. Plans will encompass new systems needed, rehabilitation of existing systems needed, and expansion of existing systems.

System Management

Smaller water supply systems, such as those using hand pumps, can be readily community managed using volunteer or paid, trained pump caretakers and local artisans as necessary. More complex and larger systems, such as electric or diesel pumped, piped systems or large gravity-fed systems, require various management options for sustainability.

One management option is for the COWSO or authority or equivalent to act as a utility board, maintaining management oversight and setting tariff, and contract all system O&M to a private firm. Alternately, various functions in system O&M (such as water production, distribution, tariff collection, etc.) can be separately contracted. Another model is for the COWSO to directly manage individual staff engaged on contract to cover all O&M functions. Water kiosks for public standpipes are feasible as another management option, where the kiosk operator receives a commission on water sales. Some COWSOs or authorities will opt for an option where bulk water supply is contracted to a private firm, but they manage distribution and tariff collection. This is potentially attractive if the water requires treatment or the source is a multiple well field for example.

Regardless of management option selected, the key factor for sustainability is that management options are available to choose from, and that individual COWSOs and authorities are encouraged and facilitated to make the most appropriate and realistic choice for their situation.

10.2.3 Urban Water Supply and Sewerage

The Policy

The National Water Policy on urban sub sector aims at achieving sustainable, effective and efficient development and management of urban water and sewerage services. This will be attained by providing a framework in which the desired targets are set outlining the necessary measures to guide the entire range of actions and actors with a view of improving the quality of service delivery, sustainably.

Institutional and Legal Arrangement

An appropriate institutional framework that ensures establishment of decentralised autonomous entities in all urban centres is in place. All regional centres have formed Urban Water Supply and Sewerage Authorities, managing water supply and sewerage facilities. The Authorities are being managed under the supervision of Board members drawn from within the respective communities. The institutional set up also provides for and promotes full involvement of women (who are the drawers of water) at all levels.

In order to ensure an efficient and comprehensive institutional framework, the following are being addressed at different stages:

- Functions of the Ministry have been streamlined and the existing urban authorities are being strengthened invariably, the results of which some are already autonomous.
- Establishment of new urban entities of user groups is being promoted.
- Staff are being deployed and trained up to the lowest level.
- Effective mechanism for monitoring of urban entities has been established, in which the Energy and Water Utilities Regulatory Authority (EWURA) is in place, by law.

In order that the institutional framework may be effective, the urban authorities are being established legally, through an act of law, enacted in 1997. Both institutional and legal frameworks ensure sustainability of the installed facilities as well as the delivery of service.

Financing and System Management

The ultimate goal of the urban entities is to have autonomy with sustained service delivery through full cost recovery systems. To ensure full cost recovery, mechanisms for regulating tariff levels are in place from within the entities Boards. Furthermore, EWURA which is already in place, is the overseer of all water tariffs in all urban and other areas where the service is commercially managed. This is to ensure equity, efficiency and sustainability. The authorities managing water supply and sewerage systems are already implementing various strategies aimed at sustainability.

10.3 Risks

There are several risks associated with the WSDP. Some, such as changes in commodity prices, droughts, political instability and failure to reduce poverty or achieve higher growth, are at the macro level and cannot be mitigated within the programme. Others, described below, are at the programme level and are mitigated to a substantial degree by sustainability factors set out in the preceding section.

There is potential for development partners to fail to adhere to a SWAP framework and/or not provide adequate or timely inputs to the WSDP. However, aid coordination is improving over time with the Sector Working Group and budget management through the JAS framework.

10.3.1 Risks on Water Resources Management

Sector ministries continue to function separately on multi-purpose WRM issues, but with operationalisation of BWOs and coordination by the Sector Working Group this risk will be ameliorated with time during the WSDP.

The principal risks facing the Water Resources Management are:

- the potential for government not to provide an adequate degree of autonomy to the nine BWOs, enabling good governance and their responding to stakeholder needs or allowing devolution of authority to stakeholder groups;
- the continued degradation of basins due to pollution, over-abstraction, poor land-use practices, and encroachment of land with the consequent negative impacts on important watersheds, catchment areas and wetlands. This degradation has the potential to go as far as threatening ecosystem integrity, food security, industry and the economy itself;
- water insecurity compounded by inadequate investment in and management of water storage to buffer against droughts and floods (climate variability);
- the sectorôs high level of dependency on external financing resulting in a substantial amount of its budget being drawn from external donor support. and
- basin water boards not willing to become autonomous.

10.3.2 Risks on Rural Water Supply and Sanitation Services

There are several governance and social risks associated with devolution that are expected to be mitigated through the programme. These include:

- the tendency of influential people in the community to exert pressure on less advantaged groups;
- government officials paying only lip-service to participation and bottom-up planning;
- women and marginal groups being left out of the decision-making process;
- ethnic conflict and competition for resources;
- limited management experience at district and community levels causing management conflicts and inefficient allocation of resources;
- traditional attitudes that water is free and a basic right. These reduce consumersô willingness to pay for water, particularly amongst the lower-income groups; and
- mistrust between the private sector, government and community groups based on past practices and experience, which should now be alleviated through policies and practices of transparency, participation and devolution.

10.3.3 Risks on Urban Water Supply and Sewerage Services

There are several risks in the urban areas associated with the programme that again will be mitigated through implementation of NAWAPO policy over time. These include:

- UWSA Boards lacking leadership and taking passive supervisory roles, failing to act independently and allowing MoW to set their agenda for development;
- UWSAôs failing to achieve the necessary degree of commercial viability and fiscal autonomy primarily through reluctance to set tariffs at the required levels; and
- UWSAôs failing to plan effectively, particularly for future water resource requirements.

ANNEX A: LFA and Results Framework

Table A.1: Water Resources Management Programme (WRMP) LFA

Goals	Strengthening of the water resources management framework.
Goal Indicators	• Improved institutional framework for WRM. • Improved coordination between stakeholders for WRM. • WRM institutions with more financial independence and administrative-financial transparency/accountability.

Component	**Management/Operations Support**	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outcomes	• Sound water resources management through an improved framework and institution as reflected in more local decision making more efficient, effective operations, more financial independence and more administrative- financial transparency and accountability. • An integrated and financially/ environmentally sustainable approach for WRM in accordance with the National Water Policy.	More timely, accurate and useful information is used to effectively manage and monitor WRM activities. BWOsôphysical office infrastructure meets BWOsô needs.	WRM institutions practice inclusive, collaborative water resource planning and astute supply/demand management.
Outcome Indicators	• Number of river basins using an integrated and financially /environmentally sustainable approach for water resources management in accordance with a National water policy. • Number of river basins with improved surface and ground water quality. • Number of Basin Water Offices using an effective MIS and water monitoring system. • Number of local organisations and water user groups actively engaged in water resources management and decision making. • Transboundary issues adequately addressed. • Legal framework harmonised with NAWAPO implemented and enforced. • Aquifer levels stabilised through an effective groundwater management. • River flow fluctuations decreased through equitable	• MIS used by BWOs and other stakeholders to obtain more accurate, timely and comprehensive information for decision making. • monitoring stations used to obtain accurate data. • improved irrigation systems. • BWOs operating with adequate physical infrastructure.	• Local organisations and user groups are involved in WRM decision making. • Improved inter-agency, inter-sector and trans-boundary relations. • Water supply balanced with water demand.

	allocations and control. • Improved water quality of aquifers and surface water.		

Component	Management/Operations Support	Capital Investment	Institutional Strengthening and Capacity Building
Outputs	• Effective legislation enacted that is harmonised with NAWAPO and resources allocated for enforcement. • Institutions formed or realigned as per NAWAPO. • Tariff structure effectively developed. • Fines for water pollution included in legislation. • Water rights issued and respected. • Water use volumes environmentally and financial sustainable. • Acceptable water quality test results. • Sustainable aquifer levels. • Acceptable level of variability for stream flow.	• MIS for WRM. • Hydrometric stations. • Groundwater monitoring stations. • Meteorological stations. • Irrigation canal gates. • Equipment purchased for BWOs. • Offices of BWOs rehabilitated where required. • Increased use of environmental laboratories.	• Conflicts effectively resolved that deal with trans-boundary, multi-sector or multi-user issues. • Basin plans used by the BWOs. • BWOs using annual business plans to plan activities. • Reservoirs used effectively to balance supply and demand.
Output Indicators	• Number and types of laws and bylaws enacted related to WRM. • Number and types of institutions formed dealing with WRM as per NAWAPO. • Governance of water resources implemented equitably and democratically involving all stakeholders including user groups. • Revenues increased from tariffs. • Number of prosecutions and TZS amount increased for violations of WRM legal requirements. • Number of Environmental Impacts Assessments completed. • Number of Water Resource Assessment studies completed. • Number of sources water protection sub-projects implemented. • Number of water right applications approved. • Number of major water users licensed. • Number of wastewater discharge permits issued. • Percent of water samples that comply with water	• Number of BWOs with MIS installed. • Number of operating hydrometric stations installed/ improved. • Number of operating groundwater monitoring stations installed/improved. • Number of meteorological stations installed/improved. • Number of non-BWO meteorological data users. • Number of irrigation gates installed. • Number of vehicles, computers and other office equipment in BWOs. • Number of BWOs rehabilitated. • Number of environmental	• Number of strengthened regional secretariats providing support to districts and local governments at district level actively involved in managing programmes in accordance with NAWAPO. • Number of local organisations and water user groups actively engaged in water resources management and decision making. • Number of motivated, highly trained staff in WRM unit of MoW. • Number of initiatives executed in support of inter-agency, multi-sector and trans-boundary issues. • Number of WRM conflicts resolved including trans-boundary, multi-sector or multi-user conflicts. • Number of effective Basins Plans prepared and implemented. • Number of BWOs having and adhering to

	quality standards once established. • Percent of aquifer recharge and aquifer level readings. • Coefficient of variation for stream flow fluctuations.	testing laboratories established or improved	annual business plans. • Number of water storage reservoirs rehabilitated and corresponding management system balancing supply and demand.

Table A.2: Rural Water Supply and Sanitation Programme (RWSSP) LFA

Goals	• Improved health and quality of life and reduced poverty of rural Tanzanians. • Scale up of Rural WSS Services to meet MDGs.		
Goal Indicators	• Reduced incidence of diarrhoeal diseases and worm infestation in infants and children in rural communities. • Increased social and economic development opportunities and improved poverty indicators in rural communities.		
Component	**Management/Operations Support**	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outcomes	Improved quality and quantity of drinking water and sanitation services for rural Tanzanians sustained through improved district level capacity, effective local water committees, private sector participation and good health/ hygiene/sanitation practices to implement demand-based RWSS projects.	Improved access of rural communities to water and sanitation services operated and maintained by capable women and men, and improved health & hygiene practices.	(a) Improved capacity of MoW to provide and administer policy and act as facilitator of overall RWSS sector development and investment; and (b) Improved capacity of the private sector / NGOs to provide goods and services to the RWSS sector.
Outcome Indicators	• Percent of rural communities with access to at least three litres/capita/day of drinking water accessible within a 30 minute collection time. • Percent of participating rural WSS system with improved drinking water quality. • Percent of rural population practising good health/hygiene/sanitation. • Percent of districts implementing demand-based RWSS model using private sector and/or NGO facilitation services. • DWSTs conducting community subproject appraisals. • Community subprojects being financed in whole or part from DWSF. • Districts mitigating impacts of HIV/AIDS.	• Increased access to rural water supply and sanitation services (total users/beneficiaries and coverage rate as percentage of population). • Increased number of rural communities with adequate management, operation and maintenance procedures (communities effectively managing RWSS services and bearing related costs), which fully involve women in decision-making roles. • Reduced time and effort spent collecting water in rural areas. • Improved drinking water quality for rural areas. • Improved knowledge, attitudes and practices in relation to health and hygiene and sanitation (including	• MoW fulfilling its redefined role and mandate as: (a) a facilitator and coordinator of sector policies and investment programmes; (b) a supporting agency for local governments and communities; and (c) and enabling agency for NGOs and private sector. • New sector projects being formulated in accordance with MoW policy and guidelines. • MoW coordinating multi-donor SWAP financing of RWSSP and other initiatives. • Improved access of communities to spare parts and technical assistance for hand pump / system maintenance and repair. • Improved capacity and increased activity of the private sector/NGOs in providing goods and services to the RWSS sector. • RWSSP MIS functioning and providing necessary information to planners and decision makers at national, regional and district levels.

	• DWSTs providing on-going monitoring & support to communities in RWS O&M and the promotion of good sanitation, health and hygiene.	increased use of latrines) in rural areas. • Rural schools with access to safe drinking water and adequate sanitation.	
Component	**Management/Operations Support**	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outputs	• DWSTs established and trained in appraisal of community subprojects and provision of related services. • District RWSS plans. • DWSF for community subprojects established. • District strategies to mitigate impact of HIV/AIDS developed.	• Environmental screening, design & construction of community subprojects completed. • Community subprojects for promotion of sanitation, health & hygiene practices completed. • Community organisation and training in management, administration, O&M of RWSS systems.	• Restructuring of MoW to respond to its new role as defined in NAWAPO. • Capacity building of MoW national and regional staff to fit new mandate / role. • RWSSP MIS expanded to include all districts. • Strengthening of private sector service providers to supply goods and services to the RWSS sector.
Output Indicators	• Number of districts trained; number of DWST training episodes; and number of DWSTs trained. • Number of District RWSS Plans completed. • Number of DWSFs established. • Number of District HIV/AIDS impact mitigation plans.	• Number of community subproject environmental screenings, engineering studies and system designs produced. • Number of RWSS subprojects executed; number of new water points provided; and number of new water users benefited. • Number of sanitation promotion subprojects executed; and number of latrines constructed. • Number of water committees (COWSOs) (and men/women) trained in management, operation and maintenance of RWSS systems. • Number of community volunteers trained in the promotion of health & hygiene practices.	• Restructuring of MoW completed. • Number and type of MoW staff trained; and number. of capacity building episodes. • MIS equipment and software installed and users trained at district, regional and national level. • Establishment of structure to provide communities with spare parts and technical assistance for hand pump / system maintenance and repair. • Number and type of private sector service providers strengthened (in particular: facilitation, extension and technical services).

		• Number of rural schools with access to safe drinking water. • Number of rural schools with adequate sanitation facilities.	

Table A.3: Urban Water Supply and Sewerage Programme LFA

Goals	• Scale up of Urban WSS Services to meet MDGs. • Improved health and quality of life and reduced poverty of urban Tanzanians.
Goal Indicators	• Reduced incidence of diarrhoeal diseases and worm infestation in infants and children in urban areas. • Increased social and economic development opportunities and improved poverty indicators in urban areas.

	Management/Operations Support	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outcomes	Improve and sustained quality and quantity of drinking water and sewerage services for urban Tanzanian managed by improved financially autonomous and commercially viable UWSA/WSSAs providing efficient and cost effective services.	Increased urban population with access to clean and safe water, and improved sewerage facilities.	a) Improved capacity of the private sector companies, CBOs and NGOs to provide goods and services to the UWSS sector. (b) Improved capacity of management and operations staff in urban water supply and sewerage systems.
Outcome Indicators	• Number of water systems expanded or rehabilitated to serve 90% of UWSA/WSSAs service area populations. • Number of urban sewerage systems expanded or rehabilitated to serve 30% of UWSAs service area populations. • Number of UWSA/WSSAs with water utility revenues covering O&M costs plus extensions and replacement of short life assets. • Number of consumer complaints reduced..	• Urban water systems improved through expansion or rehabilitation. • Urban sewerage systems expanded or rehabilitated.	• Increased role of private sector companies, CBOs and NGOs in providing goods and services to UWSS sector. • Improved capacity of UWSA managers in performing duties. • Improved performance by UWSA operators in performing duties.

	Management/Operations Support	Capital Investment	Institutional Strengthening and Capacity Building
Outputs	• Improved collection ratios. • Improved working ratios. • Reduced arrears. • Reduced distribution and sales cost of water. • Complaint tracking systems implemented that demonstrates fewer complaints and complaints are responded to appropriately.	• Improved hours of supply. • Increased population served w/ water. • Improved drinking water quality. • Reduced level of unaccounted-for-water. • Increased level of sewerage coverage.	• Increased participation of private sector co.ôs, CBOs and NGOs in providing goods and services to UWSS sector. • Better trained management in the UWSA/WSSAs. • Operator licensing system improved. • Increased number and capacity of licensed operators.
Output Indicators	• Collection ratios (collections/billings). • Working ratios (operational expenses/income). • Level of arrears (billings outstanding/monthly billing). • Cost of water (cost of distribution and selling water/volume of water sold). • Number of water meters installed. • Number of complaints by consumers. • Reduced response time to respond to complaints.	• Number of urban water systems expanded or rehabilitated to serve 90% of the UWSA/WSSAsôservice area populations. • Number of urban sewerage systems expanded or rehabilitated to serve 30% of the UWSA/WSSAsôservice area populations. • Number of sewerage systems constructed • Number of hours of supply available. • Number of water service connections. • Percent of samples that fail to meet water quality standard (number of failed samples/number of samples taken). • Percent of unaccounted-for-water (volume of water sold/volume of water produced).	• Number of capacity building workshops, training sessions and/or flyers promoting participation of private sector Co.ôs, CBOs and NGOs. • Number of private sector co.ôs, CBOs and NGOs providing goods and services to UWSS sector. • Number of courses or workshops attended by managers. • Number of O&M courses or workshops attended by operators. • Number of licensed operators trained or retrained. • Number of operators receiving favourable performance reviews. • Number of improvements made to licensing system.

	Management/Operations Support	Capital Investment	Institutional Strengthening and Capacity Building
		• Length of water distribution system expansion. • Length of sewerage system expansion.	

Table A.4: Drilling and Dam Construction Agency (DDCA) Logical Framework

Goals	Improved health and quality of life and reduced poverty of communities by delivering its services at affordable prices to complement the private sector contribution in the water and sanitation sector.
Goal Indicators	• Reduced incidence of diarrhea diseases and worm infection in infants and children. • Increased social and economic development opportunities and improved poverty indicators.

Component	**Management/Operations Support**	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outcomes	• Improved quality and quantity of drinking water services for Tanzanians sustained through improved performance efficiency in setting competitive drilling and dam construction charges. • Operating and maintaining equipment and facilities while minimising operating costs. • Abide by industrial standards, guidelines and ethics as laid down by MoW, National Construction Council, Contractors Registration Board and other professional bodies. • Effectively managing consumer demand; establishing good customer relations. • Achievement of financial autonomy by year 2010.	• Increased urban and rural population with access to clean and safe water from ground and impounded water resources. • Equipments and facilities maintained through their life time. • Efficient customer service achieved through qualified professionals.	Improved capacity of management and operations staff in ground water well drilling and dam construction.
Outcome Indicators	• Implementation capacity improved. • Business plans improved.	• Existing buildings rehabilitated. • Up-to date equipment and facilities installed. • Management Information System installed.	Increased turnover.
Outputs	• Number of wells planned and drilled. • Number of dams planned and rehabilitated or constructed. • Number of geophysical survey sites planned and reported.	• Wells drilled. • Dams rehabilitated or constructed. • Sites surveyed.	• Number of permanent staff employed by agency. • Number of zonal offices established.
Output	• Number of requests for well drilling.	• Wells drilled.	• Number of permanent staff employed by

Indicators	• Number of requests for dam construction.	• Dams rehabilitated or constructed. • Sites surveyed.	agency. • Number of zonal offices established.

Table A.5: Water Resources Institute (WRI) Logical Framework

Goals	Improved health and quality of life and reduced poverty of communities by producing qualified technicians for the water and sanitation sector.		
Goal Indicators	• Reduced shortage of human resources capacity in delivering of service. • Increased social and economic development opportunities and improved poverty indicators.		
Component	**Management/Operations Support**	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outcomes	• Improved capacity of management and operations staff in guiding and teaching. • Service delivery improved. • Financially autonomous by year 2015.	• Rehabilitation of existing and construction of new. • Installation of up to date teaching equipment and facilities. • WRI operating with adequate physical infrastructure and good working environment. • Sustaining standards, guidelines and ethics as laid down by MoW, MEVT and NACTE .	• Improved training capacity sustained through established training modules based on customer needs, with a competitive training fees and appropriate training environment, while sustaining effective customer demand and good relations. • Improved performance in examination results. • Revising training modules, and applied to produce competent technicians.
Outcome Indicators	• Management plans. • Training performance.	• Number of buildings rehabilitated or constructed. • Number of equipment installed in classroom and workshops. • Completed classrooms and buildings with updated teaching equipments.	Strengthened Institute for quality training.
Outputs	Number of qualified training staff employed by the Institute.	• Rehabilitation of existing and construction of new buildings. • Installation of new and updated equipment and facilities for classrooms and workshops. • Sustaining sound management systems.	Technicians trained in different professions.

Output Indicators	• Number of technicians recruited and qualified in different professions. • Institutional accreditation standards, guidelines and ethics laid down by MoW, MEVT, NACTE and other professional bodies adhered to.	• Number of buildings rehabilitated or constructed. • Number of equipment installed in classroom and workshops. • Completed classrooms and buildings with updated teaching equipments.	Number of qualified training staff employed by the Institute.

Table A.6: Maji Central Stores (MCS) Logical Framework

Goals	Improved quality and quantity of drinking water services for Tanzanians sustained through improved performance efficiency in setting competitive prices for water supply materials.
Goal Indicators	• Reduced shortage of water supply and sanitation materials in delivery of service. • Increased social and economic development opportunities and improved poverty indicators.

	Management/Operations Support	**Capital Investment**	**Institutional Strengthening and Capacity Building**
Outcomes	• Operating and maintaining inventory and facilities while minimising operating costs. • Abide by industrial standards, guidelines and ethics as laid down by Public Procurement Act and other guidelines and standards set by relevant professional bodies. • Effectively managing consumer demand. • Establishing good customer relations. • Financially autonomous by year 2010.	• Efficient supply service	• Service delivery improved. • Improved performance in commodity delivery.
Outcome Indicators	• Number of customers provided with services. • Number of branches established.	• Buildings rehabilitated. • MIS installed. • New equipment installed.	Number of qualified staff employed by the Agency
Outputs	Increased turnover.	Number of requests for supply service.	Improved supply service.
Output Indicators	• Number of customers provided with services. • Net revenue collection. • Net return on investment. • Unqualified audited report. • Number of inventory acquired and available in stock.	Number of requests for supply service.	Number of requests for supply service, honoured and materials delivered.

ANNEX B: Detailed Costs and Financing

B1: Summary WSDP Investment Cost (USD) 2006 - 2010

Summary WSDP Investment Cost (USD)

Programme Component	06/07	07/08	08/09	09/10	10/11	TOTAL
A. Component 1 - Strengthening of WRM Framework	4,117,000	26,518,000	27,717,000	14,235,000	2,655,000	75,242,000
A1. Basin Level WRM Support	1,617,000	12,349,000	6,879,000	6,735,000	2,655,000	30,235,000
A2. Integrated WRM&D Plans	0	6,669,000	13,338,000	0	0	20,007,000
A3. Priority WRM Infrastructure	2,500,000	7,500,000	7,500,000	7,500,000	0	25,000,000
B. Component 2- Scaling up of Rural WSS	42,105,700	53,014,700	50,683,700	72,433,700	72,433,700	291,351,500
B1. Management Support to LGAs	8,555,700	4,964,700	2,383,700	2,383,700	2,383,700	21,351,500
B2. RWSS Investments	33,550,000	48,050,000	48,300,000	70,050,000	70,050,000	270,000,000
C. Component 3- Scaling up Urban WSS	118,245,000	143,480,000	110,150,000	71,150,000	67,850,000	510,875,000
C1. Management Support to Utilities	2,695,000	6,330,000	8,000,000	7,150,000	6,850,000	31,025,000
C2. UWSS Investments	115,550,000	137,150,000	102,150,000	64,000,000	61,000,000	479,850,000
D. Component 4 - Sector Inst. Stregthening and CB	6,075,000	22,450,000	14,100,000	7,600,000	7,300,000	57,525,000
D1. Operationalization of new role of Ministry	950,000	7,050,000	6,300,000	400,000	400,000	15,100,000
D2. Technical Assistance for Sub-Sector planning	625,000	3,500,000	3,500,000	3,500,000	3,500,000	14,625,000
D3. Sector Coordination and Performance Monitoring	600,000	1,400,000	1,400,000	1,400,000	1,400,000	6,200,000
D4. Sector Capacity Building	3,900,000	10,500,000	2,900,000	2,300,000	2,000,000	21,600,000
E. Contigencies	3,216,378	3,216,378	3,216,378	3,216,378	3,216,378	16,081,888
TOTAL	**173,759,078**	**248,679,078**	**205,867,078**	**168,635,078**	**153,455,078**	**951,075,388**
Share	**18%**	**26%**	**22%**	**18%**	**16%**	**100%**

Summary WSDP Investment Cost (TShs. Million X 1,000)

Programme Component	06/07	07/08	08/09	09/10	10/11	TOTAL
A. Component 1 - Strengthening of WRM Framework	5.15	33.15	34.65	17.79	3.32	94.05
A1. Basin Level WRM Support	2.02	15.44	8.60	8.42	3.32	37.79
A2. Integrated WRM&D Plans	-	8.34	16.67	-	-	25.01
A3. Priority WRM Infrastructure	3.13	9.38	9.38	9.38	-	31.25
B. Component 2- Scaling up of Rural WSS	52.63	66.27	63.35	90.54	90.54	364.19

B1. Management Support to LGAs	10.69	6.21	2.98	2.98	2.98	26.69
B2. RWSS Investments	41.94	60.06	60.38	87.56	87.56	337.50
C. Component 3- Scaling up Urban WSS	147.81	179.35	137.69	88.94	84.81	638.59
C1. Management Support to Utilities	3.37	7.91	10.00	8.94	8.56	38.78
C2. UWSS Investments	144.44	171.44	127.69	80.00	76.25	599.81
D. Component 4 - Sector Inst. Stregthening and CB	7.59	28.06	17.63	9.50	9.13	71.91
D1. Operationalization of new role of Ministry	1.19	8.81	7.88	0.50	0.50	18.88
D2. Technical Assistance for Sub-Sector planning	0.78	4.38	4.38	4.38	4.38	18.28
D3. Sector Coordination and Performance Monitoring	0.75	1.75	1.75	1.75	1.75	7.75
D4. Sector Capacity Building	4.88	13.13	3.63	2.88	2.50	27.00
E. Contigencies	4.02	4.02	4.02	4.02	4.02	20.10
TOTAL	**217.20**	**310.85**	**257.33**	**210.79**	**191.82**	**1,188.84**
Share	**18%**	**26%**	**22%**	**18%**	**16%**	**100%**

B2: **Detailed WSDP Costs in USD 2006-2010**

Component	*Unit*	*06/07*	*07/08*	*08/09*	*09/10*	*10/11*	*Unit Cost*	*Total*	*06/07*	*07/08*	*08/09*	*09/10*
A. Component 1 - Strengthening of WRM Framework									**4,117,000**	**26,518,000**	**27,717,000**	**14,235,000**
A1. Basin Level WRM Support									***1,617,000***	***12,349,000***	***6,879,000***	***6,735,000***
Rehabilitation and construction of offices (BWOs, Catchments & WUAs)	offices		9	9	9	9	85,000	36	0	765,000	765,000	765,000
Vehicles	vehicles	12	18				40,000	30	480,000	720,000	0	0
Motorcycles	units	18	36	36			4,000	90	72,000	144,000	144,000	0
Computers and accessories	units	12	18	18	18		10,000	66	120,000	180,000	180,000	180,000
Operational equipment (Hydro Networks/GIS/Lab/Comm) and installation	units	0	6	3	3		1,300,000	12	0	7,800,000	3,900,000	3,900,000
BWO MIS and WUA database	units		9				100,000	9	0	900,000	0	0
WR assessment, monitoring and enforcement	lump-sum	3	4	9	9	9	70,000	34	210,000	280,000	630,000	630,000
Technical Assistance (design/cons.supervision)	lump-sum	3	6				50,000	9	150,000	300,000	0	0
Facilitation services for WUAs	lump-sum	3	9	9	9	9	90,000	39	270,000	810,000	810,000	810,000
Training of BWO Staff	events	9	18	18	18	18	15,000	81	135,000	270,000	270,000	270,000
Incremental Operating cost	lump-sum	9	9	9	9	9	20,000	45	180,000	180,000	180,000	180,000
A2. Integrated WRM&D Plans	lump-sum	0	3	6			2,223,000	9	***0***	***6,669,000***	***13,338,000***	***0***
A3. Priority WRM Infrastructure	schemes	5	15	15	15	0	500,000	50	***2,500,000***	***7,500,000***	***7,500,000***	***7,500,000***
B. Component 2- Scaling up of Rural WSS									**42,105,700**	**53,014,700**	**50,683,700**	**72,433,700**
B1. Management Support to LGAs									***8,555,700***	***4,964,700***	***2,383,700***	***2,383,700***
Rehabilitation of offices	offices	60	8	0	0	0	10,000	68	600,000	80,000	0	0
Construction of new offices	offices	22	22	0	0	0	40,000	44	880,000	880,000	0	0
Vehicles	vehicles	84	27	0	0	0	40,000	111	3,360,000	1,080,000	0	0
Motorcycles	unit	168	54	0	0	0	4,000	222	672,000	216,000	0	0
Computers and accessories	No.	168	54	0	0	0	5,000	222	840,000	270,000	0	0
District MIS	units	84	27	0	0	0	5,000	111	420,000	135,000	0	0
Training of DWST/communities	events	121	121	121	121	121	5,000	605	605,000	605,000	605,000	605,000
Hygiene and handwashing promotion	lump-sum	121	121	121	121	121	4,700	605	568,700	568,700	568,700	568,700
Incremental Operating Cost	lump-sum	121	121	121	121	121	10,000	605	1,210,000	1,210,000	1,210,000	1,210,000
B2. RWSS Investments									***33,550,000***	***48,050,000***	***48,300,000***	***70,050,000***
WSS systems (wells and rural piped schemes)												
LGCDG-water	w points	3900	7000	7000	12000	12000	5,000	41900	19,500,000	35,000,000	35,000,000	60,000,000
Ongoing RWSS projects (Shinyanga rural, JICA, etc)	w points	1000	500	500			6,000	2000	6,000,000	3,000,000	3,000,000	0
Facilitation/Technical services provision	lump-sum	121	121	121	121	121	50,000	605	6,050,000	6,050,000	6,050,000	6,050,000
Supply chain for system maintenance	lump-sum	5	5	5	5	5	200,000	25	1,000,000	1,000,000	1,000,000	1,000,000

Innovation Window	schemes	10	10	10	10	10	50,000	50	500,000	500,000	500,000	500,000	
Sanitation marketing (school/HH latrine retrofiting)	units	20000	100000	110000	100000	100000	25	430000	500,000	2,500,000	2,750,000	2,500,000	2,500,000
C. Component 3- Scaling up Urban WSS									**118,245,000**	**143,480,000**	**110,150,000**	**71,150,000**	**67,850,000**
C1. Management Support to Utilities									***2,695,000***	***6,330,000***	***8,000,000***	***7,150,000***	***6,850,000***
Rehabilitation of offices	offices	5	50	50	40	10	10,000	155	50,000	500,000	500,000	400,000	
Construction of new offices	offices	0.25	1.75				160,000	2	40,000	280,000	0	0	
Vehicles	vehicles	10	10	10			50,000	30	500,000	500,000	500,000	0	
Motorcycles	units	40	150	100	100	100	4,000	490	160,000	600,000	400,000	400,000	
Computers and accessories	units	40	150	100	50	50	5,000	390	200,000	750,000	500,000	250,000	
Operational equipment (GIS/Lab/Communication/meters)	units	10	10	50	50	50	30,000	170	300,000	300,000	1,500,000	1,500,000	1,500,000
UWSA MIS and Customers services	units	10	10	50	50	50	30,000	170	300,000	300,000	1,500,000	1,500,000	1,500,000
Technical Assistance (design/cons. supervision)	lump-sum	10	20	20	20	20	50,000	90	500,000	1,000,000	1,000,000	1,000,000	1,000,000
Training of Utility Staff	events	1	5	5	5	5	20,000	21	20,000	100,000	100,000	100,000	
Hygiene/handwashing promotion/Sch sanitation	units	5000	20000	20000	20000	20000	25	85000	125,000	500,000	500,000	500,000	
Incremental Operating cost	lump-sum	50	150	150	150	150	10,000	650	500,000	1,500,000	1,500,000	1,500,000	1,500,000
C2. UWSS Investments									***115,550,000***	***137,150,000***	***102,150,000***	***64,000,000***	***61,000,000***
Dar es Salaam								0					
Dar WSS Project	lump-sum	1.8	1	0.2			10,000,000	3	18,000,000	10,000,000	2,000,000	0	
Medium Term Investment Program (Kidunda, etc)	lump-sum		1.25	2	2	2	20,000,000	7.25	0	25,000,000	40,000,000	40,000,000	40,000,000
Group I towns (Buk, Kig, Bab, Lin, Mtw,Mus,Sum)	lump-sum	4	7	7			1,450,000	18	5,800,000	10,150,000	10,150,000	0	
Group II towns (Moro, Tab)	lump-sum	0.5	1	1			6,000,000	2.5	3,000,000	6,000,000	6,000,000	0	
Group III towns (Aru, Dod, Mos, Tan)	lump-sum	0.25	1	2	1	1	10,000,000	5.25	2,500,000	10,000,000	20,000,000	10,000,000	10,000,000
Group IV towns (Mbe, Mwa, Iri, Son, Shi, Sin)	lump-sum	0.25	1	1	1	1	5,000,000	4.25	1,250,000	5,000,000	5,000,000	5,000,000	5,000,000
Group V towns (District Headquarter and Small Towns)	lump-sum	20	40	40	30	20	300,000	150	6,000,000	12,000,000	12,000,000	9,000,000	6,000,000
Other On-going Urban WSS Projects								0					
Shinyanga Pipeline Project	lump-sum	2.6	0.9				20,000,000	3.5	52,000,000	18,000,000	0	0	
KfW-EU WSS Project (Mwanza, etc)	lump-sum	2.4	3.5	0.1			10,000,000	6	24,000,000	35,000,000	1,000,000	0	
Dodoma-Tabora WSS Project (SECO)	lump-sum	0.5	1	1			6,000,000	2.5	3,000,000	6,000,000	6,000,000	0	
D. Component 4 - Sector Inst. Stregthening and CB									**6,075,000**	**22,450,000**	**14,100,000**	**7,600,000**	**7,300,000**
D1. Operationalization of new role of Ministry									***950,000***	***7,050,000***	***6,300,000***	***400,000***	
Rehabilitation and construction of offices	offices	0.1	0.9	1			5,000,000	2	500,000	4,500,000	5,000,000	0	
Vehicles	vehicles	5	5				50,000	10	250,000	250,000	0	0	
Computers and accessories	units		20	20			20,000	40	0	400,000	400,000	0	
Operational equipment (GIS/Lab/Communication)	units		1				500,000	1	0	500,000	0	0	

Sector MIS and database	lump-sum		1				500,000	1	0	500,000	0	0
Technical Assistance (strategic planning/const.supervision)	lump-sum		1	1			500,000	2	0	500,000	500,000	0
Training of Sector Staff	lump-sum	0	1	1	1	1	200,000	4	0	200,000	200,000	200,000
Incremental Operating cost	lump-sum	1	1	1	1	1	200,000	5	200,000	200,000	200,000	200,000
D2. Technical Assistance for Sub-Sector planning									***625,000***	***3,500,000***	***3,500,000***	***3,500,000***
General program management support												
Rural WSS	lump-sum	0.25	1	1	1	1	500,000	4.25	125,000	500,000	500,000	500,000
Urban WSS (incl. EU WF)	lump-sum	0.25	1	1	1	1	1,000,000	4.25	250,000	1,000,000	1,000,000	1,000,000
WRM	lump-sum	0.25	1	1	1	1	1,000,000	4.25	250,000	1,000,000	1,000,000	1,000,000
Development of regulations and operational procedures -WRM	lump-sum		1	1	1	1	500,000	4	0	500,000	500,000	500,000
Cross-sectoral harmonization of policies, strategies, plans -WRM	lump-sum		1	1	1	1	500,000	4	0	500,000	500,000	500,000
D3. Sector Coordination and Performance Monitoring									***600,000***	***1,400,000***	***1,400,000***	***1,400,000***
Support to PCT, Sector Working Group and CWB	lump-sum	0.5	1	1	1	1	200,000	4.5	100,000	200,000	200,000	200,000
Annual Sector Reviews and Stakeholder Consultation	lump-sum		1	1	1	1	200,000	4	0	200,000	200,000	200,000
Annual financial audits	lump-sum	0.5	1	1	1	1	250,000	4.5	125,000	250,000	250,000	250,000
Annual technical audits (procurement/ESMF/RPF)	lump-sum	0.5	1	1	1	1	250,000	4.5	125,000	250,000	250,000	250,000
Implementation of communication strategy	lump-sum	0.5	1	1	1	1	500,000	4.5	250,000	500,000	500,000	500,000
D4. Sector Capacity Building									***3,900,000***	***10,500,000***	***2,900,000***	***2,300,000***
Sector Staff Augmentation and Training	lump-sum	1	1	1	0.5	0.5	1,000,000	4	1,000,000	1,000,000	1,000,000	500,000
Support to Local Private Sector/Drilling Industry and DDCA	units	5	15	0			500,000	20	2,500,000	7,500,000	0	0
Support to WRI and other training institutions:												
Logistics	units	1	3	3	3		100,000	10	100,000	300,000	300,000	300,000
Technical Assistance/Training Support	lump-sum	1	4	4	4	4	100,000	17	100,000	400,000	400,000	400,000
Facilities	lump-sum		1	1	1	1	600,000	4	0	600,000	600,000	600,000
Support to NGOs and CBOs	events	1	2	2	2	2	50,000	9	50,000	100,000	100,000	100,000
Support to NEMC, Min. Lands, MoW, RS, BWOs, LGAs for ESMF & RPF	lump-sum	0.25	1	1	1	1	200,000	4.25	50,000	200,000	200,000	200,000
Support to EWURA	lump-sum	0.5	2	1.5	1	1	200,000	6	100,000	400,000	300,000	200,000
E. Contigencies									**3,216,378**	**3,216,378**	**3,216,378**	**3,216,378**
TOTAL									**173,759,078**	**248,679,078**	**205,867,078**	**168,635,078**
Share									**18%**	**26%**	**22%**	**18%**

B3: Financing Requirement for 2006 – 2025 in USD millions

PROGRAMME COMPONENT	2006 - 2010	2010 - 2015	2015 - 2020	2020 - 2025	TOTAL
WATER SOURCES MANAGEMENT					
COSTS					
COMPONENT COST(PERIOD)	75.24	94.52	85.19	78.33	**333.28**
CUMULATIVECOMPONENT COST	**75.24**	**169.76**	**254.95**	**333.28**	**333.28**
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	13.40	16.93	13.04	4.94	48.30
WATER RESOURCES REVENUES	9.12	35.58	39.13	43.05	126.88
OTHER FUNDING (NGOs,DONORS,ETC)	39.71	35.74	32.17	28.95	136.57
TOTAL AVAILABLE RESOURCES	62.23	88.24	84.34	76.93	311.75
CUMULATIVE AVAILABLE RESOURCES	62.23	150.48	234.82	311.75	311.75
FINANCING REQUIREMENTS					
FINANCING GAP	13.01	6.27	0.85	1.39	21.53
CUMULATIVE FINANCING GAP	13.01	19.28	20.13	21.53	21.53
RURAL WATER SUPPLY & SANITATION					
COSTS					
COMPONENT COST(PERIOD)	291.35	362.70	523.58	465.67	1643.30
CUMULATIVECOMPONENT COST	291.35	654.05	1177.62	1643.30	1643.30
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	34.53	37.92	39.82	41.81	154.07
COMMUNITY FUNDING	13.60	16.32	19.58	23.50	73.00
OTHER FUNDING (NGOs,DONORS,ETC)	242.40	218.16	196.34	176.71	833.61
TOTAL AVAILABLE RESOURCES	290.53	272.40	255.74	242.02	1060.69
CUMULATIVE AVAILABLE RESOURCES	290.53	562.93	818.67	1060.69	1060.69
FINANCING REQUIREMENTS					
FINANCING GAP	0.82	90.30	267.83	223.65	582.61
CUMULATIVE FINANCING GAP	0.82	91.12	358.95	582.61	582.61
URBAN WATER SUPPLY & SEWERAGE					

PROGRAMME COMPONENT	2006 - 2010	2010 - 2015	2015 - 2020	2020 - 2025	TOTAL
COSTS					
COMPONENT COST(PERIOD)	510.88	351.15	208.33	43.74	1114.09
CUMULATIVECOMPONENT COST	510.88	862.03	1,070.36	1,114.09	1,114.09
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	66.72	35.09	26.88	-	128.69
UWSA REVENUES	11.20	13.44	14.78	16.26	55.69
OTHER FUNDING (NGOs,DONORS,ETC)	376.20	225.72	135.43	27.09	764.44
TOTAL AVAILABLE RESOURCES	454.12	274.25	177.10	43.35	948.81
CUMULATIVE AVAILABLE RESOURCES	454.12	728.37	905.46	948.81	948.81
FINANCING REQUIREMENTS					
FINANCING GAP	56.75	316.06	181.45	43.74	598.01
CUMULATIVE GAP	56.75	372.82	554.27	598.01	598.01
SECTOR INST. STRENGTHERNING AND CB					
COSTS					
COMPONENT COST(PERIOD)	57.53	28.58	30.26	28.26	144.62
CUMULATIVECOMPONENT COST	57.53	86.11	116.36	144.62	144.62
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	11.44	0.89	1.06	1.17	14.56
OTHER FUNDING (DONORS)	41.69	2.92	0.29	0.03	44.93
TOTAL AVAILABLE RESOURCES	53.13	3.81	1.36	1.20	59.49
CUMULATIVE AVAILABLE RESOURCES	53.13	56.93	58.29	59.49	59.49
FINANCING REQUIREMENTS					
FINANCING GAP	4.40	24.77	28.90	27.06	85.13
CUMULATIVE GAP	4.40	29.17	58.07	85.13	85.13
OVERALL WSDP					
COSTS					
COMPONENT COST(PERIOD)	951.08	878.79	889.72	646.79	3,366.38
CUMULATIVECOMPONENT COST	951.08	1,829.87	2,719.59	3,366.38	3,366.38
AVAILABLE RESOURCES					
GOVERNMENT ALLOCATION	126.09	90.82	80.80	47.91	345.62

PROGRAMME COMPONENT	2006 - 2010	2010 - 2015	2015 - 2020	2020 - 2025	TOTAL
WATER RESOURCES REVENUES	9.12	35.58	39.13	43.05	126.88
COMMUNITY FUNDING	13.60	16.32	19.58	23.50	73.00
UWSA REVENUES	11.20	13.44	14.78	16.26	55.69
OTHER FUNDING (NGOs,DONORS,ETC)	700.00	482.54	364.23	232.78	1,779.55
TOTAL AVAILABLE RESOURCES	860.01	638.70	518.54	363.50	2,380.74
CUMULATIVE AVAILABLE RESOURCES	**860.01**	**1,498.71**	**2,017.24**	**2,380.74**	**2,380.74**
FINANCING GAP					
FINANCING GAP	91.07	240.09	371.19	283.30	985.64
CUMULATIVE FINANCING GAP	**91.07**	**331.16**	**702.35**	**985.64**	**985.64**

Annex B4: Unit Costs for WSDP

B4.1: Water Resources Management Component

Network Rehabilitation, Procurement of Technical Equipment Facilities and Civil Works

The unit costs for networks rehabilitation include the cost of equipment (data loggers and sensors), fabrication of components for the infrastructure for installation of the equipment and the construction and installation of the equipment. Various types of water level sensors and data-loggers exist. The choice depends on a number of things such as, condition of the gauging station and whether the WLL is used for rivers loaded with sedimentation, groundwater wells, lakes marshy or brackish waters. Other important parameters to consider are robustness of the equipment, cost of the equipment and the cost of installation and maintenance. For example high rates of sediment will normally exclude a float and weight type of sensor, high temperature fluctuations will exclude use of the bubbler type sensor. A remote station will require a more robust sensor. The DWR specifications are for high performance and very robust equipment and it is assumed that this practice will continue in the future. The unit costs for water level loggers include accessories for installation of the sensor and data-logger. The unit-rates were derived from recent procurements of such equipment in the department of Water Resources.

Fabrication of installation and gauging suspension components

The components found at some of the gauging stations include cableway traveler system, stilling wells and housing for the WLL. The staff gauge is the basic or primary sensor installed at every hydrometric station. Cableway posts and recorder well are heavy-duty equipment and are better fabricated at the nearest best foundry workshop. The unit cost of fabrication per station is an average value for gauge posts, cableway traveler system, housing for WLL and stilling well, and this value values derived from recent procurements for network rehabilitation in the Wami Ruvu basin. Boreholes are normally drilled for groundwater monitoring. Experts in the Department of Water Resources provided the average unit cost of a finished BH for monitoring of groundwater level fluctuations.

Construction and installations

The cost of civil works for hydrometry observation stations includes installing stilling wells, cableway posts and gauge posts. The technicians within the department of water resources are trained to install those components and normally this has been part of their work. The unit rate used for estimating the cost of construction of hydrometric stations is derived from recent (2004/05) procurement of a contractor to install and construct monitoring stations in the Wami Ruvu Basin. The value of 1.5million estimated by the contractor is considered fair and is used to estimate the cost of civil works, though the DWR staff could do the job for 60-75% less.

Running Costs of Stations

It is assumed that a hydrometric station will be visited 8 times by the basin technicians for station maintenance station calibration and replacement of batteries and the like. Visits are organised in round trips in such a way that as many stations as possible are visited per day. Normally 2, 3 or more stations will be visited per day. A trip of one day or two days could be make to only one remote station. The assumption is that 2 stations can be visited per day on the average by a team of 3-technicians. Thus the number of visits per hydrometric station is four in a round trip where technician are paid per diem. Less time and fewer people will be required to visit Meteorological stations and water Quality stations mainly because they situated in places which can easily be reached. The unit rates for monitoring stations are estimated considering per Diems for technicians, supplies and transport costs.

Facilities and Computers

The cost for facilities such as office equipment, computers and vehicles are derived from recent procurement costs. The costs of the facilities also depend on the technical specifications. It is assumed that similar specifications will be applicable in the future. The computer technology is moving fast and more useful technology is evolving and better and more useful equipment will be available for the same prices as they are today. It is expected that high-end computers will continue to be specified at the present prices.

Construction of building

The planning unit for the construction of buildings is the square meter and depending on the location or town the unit cost per square meter is TZS 225,000 to 250,000. For building rehabilitation, it is assumed to be 20% of the present construction cost of a new building.

Consultants' services

Certain tasks will require short term high value expertise which is not needed otherwise. Hiring short-term experts is an effective and efficient way of implementing tasks that are of short duration. The unit costs are derived from recent procurements in the MOWLD.

Seminars, Workshops and Meetings

The cost of meetings and seminars include: participants allowances, venue, honoraria for facilitators, and transport. The unit costs for meetings and workshops are drawn from experiences gained from conducting similar meetings and workshops in Tanzania.

Training

Unit costs for formal training are those for the University of Dar es Salaam, Faculty of Engineering, and Department of Water Resources. For external training the costs are average values from training institutions in the Netherlands, where many water resources experts in the country have trained before. The both cases the cost includes tuition fees, a subsistence allowance, and related costs.

Support to Committees WUAs and Consultations and workshops

District facilitation teams will be formed to support formation of WUAs and catchment committees. The process in formation of these entities includes awareness creation, participatory assessments, meetings and registration of the entity. Experience in the Pangani and Rufiji basin was used to estimate the unit costs for this type of process. The unit rates are provided in Table D.2.1.

The table of Unit Cost Tables for WRM is provided as Table B4.1.1.

B4.2:Rural Water Supply and sanitation Component

Unit costs for capital investment in rural water supply are based on experience gained from the current implementation of RWSSP-supported sub-projects, and are derived from average depths, distances, materials used and labour costs in each case.

Unit costs for capital investment in the rehabilitation of existing small towns water systems currently are estimated at 66% of the above unit costs for new systems.

Unit Costs for Capital Investment in New Water Systems

TECHNOLOGY	AVERAGE COST / SYSTEM (USD)	POPULATION SERVED	UNIT COST / CAP / YEAR (USD)
RURAL WATER SUPPLY			
Shallow Well and Hand Pump	2,100	250	8.40
Borehole & Hand Pump (25m – 40m average depth)	6,150	250	24.60
Gravity Fed and Piped (Small)[16]	76,300	1,500	50.90
Gravity Fed and Piped (Large) [43]	84,800	2,500	33.90
Electric or Diesel Pumped and Piped (Small)[16]	64,000	1,500	42.70
Electric or Diesel Pumped and Piped (Large)[16]	71,300	2,500	28.50
Protected Spring	900	250	3.60
Windmill	8,000	250	32.00
Rainwater Catchment	4,335	500	8.67
Charco Dam	15,600	1,500	10.40

[43] Capital costs for gravity flow and pumped schemes are based on data available for small systems only. Figures for large systems shown in Table 4.6 assume a 33% economy of scale on a per-capita basis.

Unit Costs for O&M of Water Systems

TECHNOLOGY	O&M COST / SYSTEM / YEAR (USD)	POPULATION SERVED	UNIT COST / CAP / YEAR (USD)
Shallow Well and Hand Pump	28	250	0.11
Borehole & Hand Pump (25m – 40m average depth)	28	250	0.11
Gravity Fed and Piped (Small)[16]	92	1,500	0.06
Gravity Fed and Piped (Large)[16]	153	2,500	0.06
Electric or Diesel Pumped and Piped (Small)[16]	1,470	1,500	0.98
Electric or Diesel Pumped and Piped (Large)[16]	2,450	2,500	0.98
Protected Spring	5	250	0.02
Windmill	30	250	0.12
Rainwater Catchment	45	500	0.09
Charco Dam	150	1,500	0.10

B4.3:Unit Costs for UWSS Component

1.1Costing Urban Water Supply Infrastructure

The cost for the construction of urban water supply and sewerage infrastructure rests on four parameters for every urban area:

- The size of the current population and projected population
- Current and target coverage
- Technology to be used.
- Unit costs of every technology

The per capita unit cost is calculated by dividing the total cost of the water supply scheme by the number of beneficiaries. It is based on average values, which take into account possibly higher costs for targeting disadvantaged regions or social groups.

The **operations and maintenance** cost are computed by multiplying the relevant per capita unit cost with the number of people that have access to safe water in a given year. Increments as well as the number of people already covered are considered.

Unit Costs for Capital Investment in New Water Systems

TECHNOLOGY	AVERAGE COST / SYSTEM (USD)	POPULATION SERVED	UNIT COST / CAP / YEAR (USD)
URBAN WATER SUPPLY			
Borehole & Electric or Diesel Pumped scheme (>50m –depth)	1,200,000	50,000	24.0
Gravity Fed and Piped (Large) [44]	622,880	50,000	12.50

Electric or Diesel Pumped and Piped (Small) [16]	64,000	1,500	42.70
Electric or Diesel Pumped and Piped SURFACE SOURCE (Large) [16]	1,560,000	50,000	31.20
URBAN SEWERAGE			
Sewerage System	359,280	3,000	119.76
Waste Water Treatment Plant	302,080	3,000	100.7
SMALL TOWN WATER SUPPLY			
Shallow Well and Hand Pump	2,028	250	8.11
Borehole & Hand Pump (25m – 40m average depth)	4,245	250	16.98
Gravity Fed and Piped (Small)[16]	75,810	1,500	50.54
Gravity Fed and Piped (Large)[16]	84,150	2,500	33.66
Electric or Diesel Pumped and Piped (Small)[16]	45,390	1,500	30.26
Electric or Diesel Pumped and Piped (Large)[16]	50,500	2,500	20.20
Protected Spring	870	250	3.47
Windmill	11,070	250	44.28
Rainwater Catchment	4,335	500	8.67
Charco Dam	15,600	1,500	10.40

Unit Costs for O&M of Water Systems

TECHNOLOGY	O&M COST / SYSTEM / YEAR (USD)	POPULATION SERVED	UNIT COST / CAP / YEAR (USD)
URBAN WATER SUPPLY			
Borehole & Electric or Diesel Pumped scheme (>50m –depth)	28	250	0.11
Gravity Fed and Piped (Large)	28	250	0.11

TECHNOLOGY	O&M COST / SYSTEM / YEAR (USD)	POPULATION SERVED	UNIT COST / CAP / YEAR (USD)
Electric or Diesel Pumped and Piped (Small)	92	1,500	0.06
Electric or Diesel Pumped and Piped SURFACE SOURCE (Large) [16]	153	2,500	0.06
SMALL TOWN WATER SUPPLY			
Shallow Well and Hand Pump	20	250	0.08
Borehole & Hand Pump (25m – 40m average depth)	43	250	0.17
Gravity Fed and Piped (Small)	765	1,500	0.51
Gravity Fed and Piped (Large)	1,275	2,500	0.51
Electric or Diesel Pumped and Piped (Small)	870	1,500	0.58
Electric or Diesel Pumped and Piped (Large)	1,450	2,500	0.58
Protected Spring	8	250	0.03
Windmill	110	250	0.44
Rainwater Catchment	45	500	0.09

Per Capita Investment Requirements for Urban Centres

URBAN CENTRE	POPULATION (2002 CENSUS)	FUNDS REQUESTED (2006-2010) TZS millions	AMOUNT/CAPITA (TZS millions)
Lindi	41,500	16,830.00	0.40554
Bukoba	81,221	13,301.00	0.16376
Musoma	108,242	17,580.00	0.16241
Tabora	188,808	28,208.00	0.14940
Mwanza	476,646	59,998.00	0.12588

URBAN CENTRE	POPULATION (2002 CENSUS)	FUNDS REQUESTED (2006-2010) TZS millions	AMOUNT/CAPITA (TZS millions)
Iringa	106,668	1,392.00	0.01305
Babati	64,393	7,668.00	0.11908
Songea	80,000	8,965.00	0.11206
Singida	115,354	10,968.00	0.09508
Moshi	143,799	12,202.00	0.08485
Dodoma	324,347	27,430.00	0.08457
Kigoma	144,852	11,813.00	0.08155
Arusha	281,600	17,358.00	0.06164
Sumbawanga	147,483	8,765.00	0.05943
Mtwara	91,792	5,135.00	0.05594
Morogoro	228,863	11,542.00	0.05043
Shinyanga	135,166	6,656.00	0.04924
Mbeya	265,586	11,218.00	0.04224
Tanga	250,000	8,067.00	0.03227
AVERAGE UWSA	3,276,320	285096	**0.08702**
DAWASA	4,000,000	205,000	**0.05125**

ANNEX C: Summary of Monitoring and Evaluation Responsibilities

Table C.1: Summary of Monitoring and Evaluation Responsibilities*

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
Main Entities Involved in M&E Activities for the WSDP					
MoW - Water Sector Working Group	• WSDP in entirety. • All sub-projects.	• Results. • Processes. • All aspects of sub-project planning and implementation. • Monitoring of funds from National Water Fund.	Quarterly.	• MIS systems. • MKUKUTA principles. • WSDP LFA and PMF. • Poverty Monitoring System (PMS) tools. • Baseline studies. • Focus groups. • Interviews. • Site visits. • Water quality monitoring. • Participatory workshops.	• Monthly management reports on sector coverage, status of capacity building, status of sector coordination, budget performance. • Quarterly reports on implementation status, results, disbursements, findings, recommendations, main issues, decisions sought of development partners, environmental performance. • Resources tracking studies. • Technical & financial audits. • Reports re National Water Fund allocations as required. • Annual State of the Water Sector report. • Mid-term review. • Joint sector reviews (for input into MKUKUTA performance reviews). • Implementation completion report
Dept. of Water Resources of MoW	• WRM sub-projects. • Basin water resources. • National water resources.	• Monitoring and evaluation of Basin Water Boards. • Trans-boundary issues. • Multi-sectoral issues. • Technical issues.	TBD.	• BWB and BWO reports; • Meetings with BWBs, BWOs and other WRM stakeholders; • MIS systems; and • WSDP LFA and PMF.	• TBD.

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
Basin Water Offices (BWOs)	• WRM sub-projects. • Basin water resources.	• WRM issues and results; • fund flows; • water rights adjudications; and • trans-boundary issues (six basins)	At least quarterly.	• Baseline studies. • Site visits. • Monitoring stations. • MIS systems. • WSDP LFA and PMF. • Multi-sectoral meetings and workshops.	• Quarterly Reports.
Energy and Water Utilities Regulatory Authority (EWURA)	• UWSAs. • Urban water and sewerage sub-projects.	• Regulatory compliance of UWSAs. • Performance of UWSAs.	Continuous.	• Water quality testing (audits). • Inspections of Water Treatment Plants (WTPs) and Sewage Treatment Plants (STPs).	As required.
Urban Water and Sewerage Authorities (UWSA) or Water Supply and Sanitation Authorities (WSSA)	• Urban water supply. • Sewerage sub-projects and overall urban water and sewerage delivery.	• Drinking water quality and quantity. • Sewerage extension and O&M. • Service levels and coverage rates. • Financial management issues. • Sustainability issues.	Quarterly, monthly, weekly or daily, depending upon indicator/ parameter.	• Drinking water quality testing. • STP discharge monitoring. • MIS systems. • WSDP LFA and PMF.	• Generally quarterly and annual status reporting depending on the requirements of the EWURA, MoW and Development Partner requirements. • Reporting should also include reporting of Best Management Practices for sharing with other UWSAs and others and not just regulatory requirements or requirements of GoT and Development Partner requirements.

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
Local (District) Governments and District Water and Sanitation Teams (DWSTs)	• Rural water supply. • Sanitation sub-projects • Overall rural service delivery.	• Drinking water quality • No. of water points • Service levels and coverage rates. • Financial management issues. • Sustainability issues. • Health, hygiene, sanitation issues. • Status of capacity building. • Gender equality issues.	At least quarterly	• Drinking water quality testing. • Site visits. • MIS systems. • WSDP LFA and PMF	• Quarterly status reports documenting progress, identification of problems and associated recommendations, issues needing follow-up, progress since previous status report.
OTHER ENTITIES INVOLVED IN WSDP M&E					
Water Sector High Level Forum, Minister for Water & Minister of Local Governments	WSDP in entirety.	• Policy choices. • Effectiveness of spending. • Performance. • Strategies. • Funding decisions.	Semi-annual.	• MKUKUTA principles. • WSDP LFA and PMF. • Outputs from MIS systems. • Official reports.	TBD.

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
Independent Monitoring Group (IMG) of the Joint Assistance Strategy (JAS)	• Sub-projects. • Interactions of development partners and GoT Ministries.	• Results. • Success of JAS model in the sector.	Mid-term and end of JAS period.	• JAS monitoring matrix. • Indicators from Paris Declaration. • Select site visits. • Other review processes.	• Water sector info. for IMG mid-term. • Final JAS assessment reports.
Development Partners (DPs)	Sub-projects financed by development partners.	Focus will depend on type(s) of sub-project.	As required by Development Partners.	Various methodologies and tools including JAS monitoring matrix and MIS systems.	• Annual M&E reports for JAS Annual Implementation reports. • Mid-term and final review reports. • Other reports as required by Development Partners.
National Audit Office (NAO) of Min. of Finance	• WSDP finances. • Sub-projects.	Financial flows and value for money.	Quarterly and annual.	Established NAO methodologies & tools.	Established NAO reports.
President's Office - Regional Administration and Local Government (PO-RALG) & Regional Secretariat	Sub-projects.	Administrative and/or technical monitoring to support LGAs.	Periodic as needed.	• Established PO-RALG and Regional Secretariat methodologies and tools. • MIS systems.	Established reporting.
Ministry of Health through Village Health Posts, Health Centres and central staff	• Macro level health issues for sector. • Individual sub-projects.	Health related matters and indicators.	At least quarterly.	• Baseline studies. • Health surveys. • Site visits. • MIS systems. • WSDP LFA and PMF.	Annual status reports.

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
National Water Board (NWB)	WRM sub-projects and related institutional strengthening.	• Inter-sectoral WRM planning. • Coordination of basin plans. • Investment issues. • Conflict management. • Technical issues.	As required.	• WSDP LFA and PMF. • Meetings w/ Basin authorities and other stakeholders.	TBD.
	BWOs.	Oversight of BWO activities and results.	TBD.	• BWB and BWO reports. • Meetings w/ BWBs, BWOs and other WRM stakeholders.	TBD.
Basin Water Boards (BWBs)	WRM sub-projects.	• WRM planning & management. • Data analysis and assessment. • Results of WRM sub-projects.	TBD.	• Meetings with BWO staff and other stakeholders. • MIS systems. • WSDP LFA and PMF.	Quarterly Reports.
Catchment Water Committees (CWCs) and Sub-Catchment Water Committees	WRM plans and sub-projects in specific Catchment or Sub-Catchment Areas.	• Catchment plans. • Conflicts within the catchment. • Review of data collected.	TBD.	• Baseline studies. • Site visits. • Monitoring stations. • MIS systems. • WSDP LFA and PMF. • Multi-sectoral meetings & workshops.	Periodic reports to BWOs.
UWSA/WSSA Board of Directors	Urban water and sewerage sub-projects.	• Results. • Major issues that arise.	TBD.	• Meetings w/ UWSA/WSSA staff and user groups. • UWSA/WSSA reports.	TBD.

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
Village Councils	Rural water supply and sanitation sub-projects.	• Financial management issues. • Sustainability issues. • Concerns of villagers. • Key issues identified by Village Water Committee.	As required but at least quarterly.	• Meetings with Village Water Committees. • Review of Village Water Committee reports. • Focus groups. • MIS systems where capacity exists.	As required by District Government.
Village Water Committees	Rural water supply and sanitation sub-projects.	All aspects of water supply and sanitation subprojects.	Frequency of monitoring will depend on what is being monitored ï some indicators or parameters will be monitored continuously while others will be monitored weekly, monthly, or quarterly.	• Drinking water quality testing. • MIS systems. • WSDP LFA and PMF.	Monthly, quarterly status reports.

Entity	M&E Scope	M&E Foci	Frequency	Method	Reporting
Performance Monitoring Technical Working Group (as per DPG-Water sector dialogue)	• WSDP in entirety. • All sub-projects.	• Results. • Processes. • All aspects of sub-project planning and implementation.	TBD.	• MIS systems. • MKUKUTA principles. • WSDP LFA and PMF. • Poverty Monitoring System (PMS) tools. • May include baseline studies, focus groups, interviews, site visits, water quality monitoring reports, participatory workshops.	TBD.

Other entities involved in M&E of the WSDP include: Urban Consumer Consultative Councils , Facilitation Service Providers (FSPs), Technical Service Providers (TSPs), the Ministry of Energy and Minerals (MEM), Tanzania National Parks (TANAPA), Division of the Environment (DOE) in the Vice-Presidentôs Office, National Environmental Management Council (NEMC), RUBADA, Ministry of Lands and Human Settlement, Ministry of Infrastructure and Development,, The Ministry of Trade, Industry and Marketing and Non-Governmental Organisations.

ANNEX D: Immediate Potential Dam Sites, by Basin, for Mitigating Water Insecurity

Table D.1: Potential Dam Sites, by Basin, for Mitigating Water Insecurity

No	Basin	Number of potential dam sites	Class	Purpose
1	Pangani	253	Small/medium/large	Domestic water supply, flood control, irrigation, livestock, hydropower
2	Rufiji	18	Small/medium/large	Domestic water supply, flood control, irrigation, environment, & hydropower
3	Wami-Ruvu	3	Large	Domestic water supply, flood control, irrigation, environment & hydropower
4	Lake Victoria	12	Small/medium/large	Domestic water supply, flood control, irrigation, environment & livestock
5	Lake Tanganyika	6	Medium	Domestic water supply, flood control, irrigation, environment & hydropower
6	Lake Nyasa	4	Small/medium/large	Hydropower, irrigation, flood control, river course stabilisation.
7	Lake Rukwa	14	Small/medium/large	Domestic water supply, flood control, irrigation, environment
8	Internal drainage	160	Small/medium/large	Domestic water supply and irrigation, livestock, environment
9	Ruvuma and Southern Coast	17	Small/medium/large	Domestic water supply and irrigation, livestock, environment
	TOTAL	**489**	**Small/medium/large**	

Note:
Sizes: Small dams: < 100,000 $m^{3;}$ Medium dams: < 1 million $m^{3;}$ and Large dams: > 1 million m^3

Table D.2: Investment Requirement for Dam Construction (Priority Areas)

COMPONENT	CATEGORY	QUANTITIES					UNIT COST	COST (million TZS)				
		2006/10	20010/15	2015/20	2020/25	TOTAL	x1000000	2006/10	20010/15	2015/20	2020/25	TOTAL
All 9 Basins	Small Dams	7	13	19	13	52	100	700	1,300	1,900	1,300	5,200
	Medium Dams	4	3	4	2	13	5000	20,000	15,000	20,000	10,000	65,000
	Large Dams	4	3	1	1	9	20000	80,000	60,000	20,000	20,000	180,000
Total		**15**	**19**	**24**	**16**	**74**		**100,700**	**76,300**	**41,900**	**31,300**	**250,200**

ANNEX E: Environmental and Social Management Framework (ESMF)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

1 INTRODUCTION

This Environmental and Social Management Framework (ESMF) is prepared for the Water Sector Development Programme (WSDP) which the Government of the United Republic of Tanzania (GoT) intends to implement in all districts of Tanzania. The purpose of this ESMF is to provide a strategic guide for the integration of environmental and social considerations in the planning and implementation of the WSDP activities. This is a summary of the main ESMF document which is available in another complete document of the Water Sector Development Programme.

1.1 Justification for Preparation of the ESMF for the Project

According to the National Environmental Policy (1997) and the Environmental Impact Assessment Guidelines, the Water Sector Development Programme would fall under the list of projects for which environmental impact assessment is mandatory, prior to implementation. The basis is that the proposed project constitutes several components of activities which would generate significant changes and effects to the environment.

The proposed Water Sector Development Programme has been categorised as A, according to the Environmental Assessment Operational Policy; and therefore, the appropriate environmental work will have to be carried out. Since the locations of the infrastructure investments and their potential negative localised impacts could not be determined prior to appraisal, projects to be implemented under this programme requires the preparation of an ESMF to ensure appropriate mitigation of potential negative environmental and social impacts.

1.2 Objectives of the Environmental and Social Management Framework

The objective of this ESMF is to ensure that the implementation of the Water Sector Development Programme will be carried out in an environmentally and socially sustainable manner.

The ESMF will provide the project implementers with an environmental and social screening process that will enable them to identify, assess and mitigate potential environmental and social impacts of the priority infrastructure investments.

The screening results will indicate whether additional environmental and/or social work will be required or not. Thus, the ESMF is designed to ensure that the appropriate level of environmental management, which could range from the application of simple mitigation measures to the preparation of a comprehensive EIA Report (according to Tanzaniaôs EIA Guidelines), is applied.

2 RELEVANT LEGISLATION AND POLICIES

2.1 Tanzanian Legislation Relevant to WSDP Implementation

A number of policies, instruments and laws support environmental management and the environmental impact assessment process in Tanzania. The National Environmental management Act (2005), the National Environmental Policy (1997) and the National Environmental Action Plan (1994) are the key instruments that cover environmental management in all the sectors of development. The Environmental Impact Assessment Guidelines prescribe the process, procedures and practices for conducting an EIA and preparing the EIA reports.

2.1.1 The National Environmental Policy (1997)

The National Environmental Policy seeks to provide the framework for making fundamental changes that are needed to bring environmental considerations into the mainstream of decision making in Tanzania.

2.1.2 The National Environmental Management Act (2005)

The National Environmental Management Act (NEMA) provides the legal and institutional framework for the management of the environment and implementation of the nationôs environmental policy.

The NEMC is responsible for the review of projects and deciding on whether they need undertake EIAs and prepare Environmental Impact Statements (EISs). The Act specifies which types of projects require EIAs in its Third Schedule. Of relevance to the WSDP, EIAs are required of 1.(a) any activity out of character with its surrounding, 1.(b) any structure of a scale not in keeping with its surrounding; 1(c) major changes in land use, 4. Dams, rivers and water resources, 12 waste disposal, and 13 natural conservation areas.

Relevant Safeguard Policies

The proposed WSDP will trigger three safeguard policies, namely, Environmental Assessment, Involuntary Resettlement and International Waterways. The Environmental Assessment is the most relevant and applicable safeguard policy for the ESMF.

2.2.1 Environmental Assessment

The objective of Environmental Assessment is to ensure that projects are environmentally sound and mitigation of their likely environmental impacts. This policy is triggered if a project is likely to have potential adverse environmental risks and impacts in its area of influence. The construction and rehabilitation of infrastructure under the WSDP may have environmental impacts, which require mitigation.

2.2.2 Involuntary Resettlement

The objective of Involuntary Resettlement is to avoid or minimise involuntary resettlement where feasible, exploring all viable alternative project designs. This policy is triggered not only if physical relocation occurs, but also by any loss of land resulting in: relocation or loss of shelter; loss of assets or access to assets; loss of income sources or means of livelihood, whether or not the affected people must move to another location. For the WSDP, a separate Resettlement Policy Framework has been prepared to provide guidelines on land acquisition and resettlement.

2.2.3 Projects on International Waterways

The objective of Projects on International Waterways is to ensure that projects that impact on international waterways do not affect the relations between the states. It is recognised that the cooperation and goodwill of riparians is essential for the use and protection of the waterways. In cases where differences remain unresolved between the state proposing the project (beneficiary state) and the other riparians prior to financing the project, normally it is urged that the beneficiary state to offer to negotiate in good faith with the other riparians, to reach appropriate agreements or arrangements. This policy is triggered if a project affects relations of riparians negatively by the increased use of water resources or by significantly polluting the water. For the WSDP, the Ministry of Foreign Affairs is responsible for initiating the notification of the riparians.

3. ENVIRONMENTAL AND SOCIAL IMPACTS

3.1 Project Phases for Environmental Management

Typical project activities to be implemented under the WSDP are broadly categorised into:

- planning and design;
- construction and rehabilitation;
- operation and maintenance; and
- decommissioning and closure phases.

Each of the project phases listed above have environmental and social consequences on the different environmental components such as soil, water and society.

3.2 Sources of Environmental and Social Impacts

Project activities will generate environmental and social impacts during implementation and operation as well as during decommissioning because of:

- the civil works for new structures will sometimes involve construction on virgin land thereby affecting the forests, animals and other natural resources;
- the rehabilitation works will require demolition of existing infrastructure and will generate rubble and waste that will need to be disposed of properly;
- both the new civil works and the rehabilitation works may require new land;
- civil works for new structures as well as rehabilitation works will affect the communities both physically (air and water pollution, nuisance and contamination etc.); and socio-economically (land use, income generation, mobility and community association)
- the water supply services will require additional water abstraction, resulting in changes in ground and surface water regimes, both inside and outside the project impact areas;
- additional use of water will result in increases in waste water generation;
- water supply activities and other civil works may cause water stagnation and sanitation problems;
- the increase in numbers of people within the project location / areas will result in depletion of natural resources, pollution of public waters and degradation of soils. Consequently, several environmental components may be affected by such activities; and
- the increase in interaction of different types of people will result in social and health problems caused by various diseases transmitted among these people and arising from high pressure on social and health services such as medical services.

4. SCREENING PROCESS FOR PROJECT SITES AND ACTIVITIES

4.1 Introduction to the Screening Process

The purpose of this screening process is to

- determine whether future projects are likely to have potential negative environmental and social impacts;
- determine appropriate mitigation measures for activities with adverse impacts;
- incorporate mitigation measures into project design;
- review and approve project proposals, and
- monitor environmental parameters during project implementation.

The extent of environmental work that might be required for projects prior to construction will depend on the outcome of the screening process described below.

Step 1: Screening of Project Activities and Sites
The initial environmental and social screening will be carried out through the use of the Environmental and Social Screening Form. The form will be completed by the Environmental Management Officer at Municipal, Ward or District level assisted by sector-specific committees such as the DWST or the DEMC. This is a necessary step for the purposes of identifying the potential environmental and social impacts, determining their significance, assigning the appropriate environmental category, proposing appropriate environmental mitigation measures, and carrying out Environmental Impact Assessments (EIAs), if necessary according to the ñTanzanian EIA.

Step 2: Assigning the Appropriate Environmental Categories
Tanzaniaôs EIA procedures are consistent with the environmental screening categories contained in the safeguard policy, Environmental Assessment. With regard to the WSDP, it is likely that most projects will be categorised as ñBò, meaning that of the potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats will be irreversible, and can be mitigated.

Some projects might be categorised as ñCò if the environmental and social screening results indicate that the projects will have no significant environmental and social impacts and therefore do not require additional environmental work.

The environmental categoryò Aò (significant, irreversible impacts) will likely not apply to many of the projects under the WSDP. However, implementers will have to pay particular attention to projects listed in Schedule 3 of the NEMA such as construction in catchment basins within declared conservation areas, effluent discharges and the rehabilitation and expansion of existing water and sanitation schemes.

Step 3: Carrying Out Environmental Work

Environmental Checklist. The purpose of the Checklist is to ensure that the identified environmental and social impacts are mitigated, controlled or eliminated through planned activities to be implemented throughout the project life. It also provides opportunities for the enhancement of positive impacts, gives details of the mitigation measures to be undertaken for the impacts, and identifies the responsible institutions to implement the mitigation measures.

An appropriate environmental management and monitoring plan will depend on the scope of identified major impacts to be addressed in the implementation of the project.

For situations where the environmental and social screening process identifies land acquisition needs that would trigger Involuntary Resettlement, then the provisions of the Resettlement Policy Framework (RPF) referred to earlier would apply.

Step 4: Review and Approval of the Screening Activity

Under the guidance of the Environmental Management Officer, the Environmental Management Committee at the local government level will review the environmental and social screening results as well as the environmental checklists that were completed in the course of project preparation to ensure that all environmental and social impacts have been identified and successfully addressed.

If the Environmental Management Committee/Environmental Management Officer finds that the submitted design is not consistent with the requirements of the environmental screening form and the environmental checklist, then the project implementer would be requested to re-design (e.g. make additional modifications and/or choose other sites). The EMC/EMO would then review again the revised application. If acceptable, it would be recommended for consideration for approval.

Step 5: Public Consultation and Disclosure

Public consultations are critical in preparing an effective and sustainable project. This requirement supports the participatory planning process that exists within water sector policy (National Water Policy of 2002, NAWAPO) in Tanzania during the identification and planning of water and sanitation projects as part of the development and implementation of local development plans for the area. The WSDP being a participatory programme, beneficiaries are expected to be directly involved in the whole project cycle, right from the planning to implementation and monitoring.

Once the project has been reviewed and cleared by the respective local level government councils as well as the full District Council, the implementers will inform the public about the results of the review. For all projects that will be implemented at the community level whether planned by the community itself or planned by local government, the ward, district/municipality, or water authority, the village/mtaa government will be responsible for disclosing the findings and recommendations of the environmental and social screening process to the village assembly, assisted by the local development committee and district facilitators.

On completion of the review the NEMC makes its recommendations to the Minister who may on a positive recommendation approve the EIS and issue an EIA Certificate or approve subject to conditions or disapprove. It is noted that the Minister may, delegate the power of approval of the EIS to the Director of the Environment, local government authorities or sector Ministries (NEMA-para 94). Any aggrieved person has the right of appealing the decision through the Environmental Appeals Tribunal (95).

5. ENVIRONMENTAL MONITORING

Environmental monitoring needs to be carried out during the construction as well as operation and maintenance of the projects in order to measure the success of the mitigation measures implemented earlier. Under WSDP, the responsibilities for monitoring and evaluation of the mitigation measures adopted under the projects would be assigned as follows:

5.1 Stakeholder Monitoring Responsibilities

Project implementers at the different LGA levels will be responsible for the day to day monitoring and reporting of feedback throughout the life of the project.

The District Environmental Management Committee and the District Environmental Management Officer will oversee compliance and effects monitoring to check whether prescribed actions and monitoring are being carried out. In close collaboration with the project implementers they/he will ensure that the monitoring plan as contained in the individual project proposals is implemented.

Members of the Community will undertake (after training) both compliance and effects monitoring. This will be done throughout the project cycle The communities will be enabled to pass on their observations and concerns through acceptable mechanisms to the local government and higher authorities.

The National Environment Management Council (NEMC) will perform an enforcement monitoring role supported by the MoW, and the LGAs based on submissions and recommendations from the Environmental Management Officers at the different LGA levels. NEMC would primarily achieve this objective through periodic field visits, supporting the Training Programme and through technical assistance and backup services to the local governments.

MoW will perform a monitoring oversight function for the entire WSDP. The monitoring guidelines developed by the Ministry to monitor performance and progress will include parameters for compliance to proposed measures safeguarding against environmental and social impacts. Monitoring activities by the implementers, Environmental Management Committees, NEMC and MoW will be carried out through regular programme audits.

5.2 Monitoring Indicators

Key indicators will be used to determine the status of affected people and their environment. EIAs will set three goals by which their success or otherwise can be evaluated:

- affected individuals, households, and communities are able to maintain or improve upon their pre-project standard of living;
- the pre-project environmental state of natural resources, bio-diversity and flora and fauna, been maintained or improved upon; and
- local communities remain supportive of the project.

6. CAPACITY BUILDING FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT

The ESMF will be implemented through the use of existing local government, regional and national structures. However, these institutions need strengthening through training to build their capacities.

Successful implementation of the ESMF will require dynamic and multi-disciplinary professionals that have general knowledge in environment management and specific skills in the use of the ESMF and the screening process. Short and tailor-made training courses and seminars will be required to reinforce the capacity and skills of the key stakeholders and officers, to carry out the environmental management activities of the ESMF. In particular, the key stakeholders participating in the WSDP will require capacity building.

The Ministry of Water

For the WSDP, the relevant staff of the Ministry will need training to enhance their skills and their awareness levels, to enable them to appreciate the environmental and social problems associated with infrastructure development.

Regional Water and Sanitation Teams (RWSTs)

The RWSTs have an obligation to encourage sustainable water resources use and management including water conservation and water catchment protection. Hence, the Regional Secretariats and Water Basin Offices have to become more environmentally conscious and capable. For the WSDP, their officers need to be trained in the implementation of the ESMF, and particularly in the screening process.

Project planners and implementers in LGAs, RWSTs DWSTs and Water Authorities

The higher local governments have the basic knowledge and capacity to undergo training in the environmental screening and EIA process so that they are able to support the lower local governments. The training will be given for DEMOs, DEMCs, RWSTs, DWSTs, Technical Service Providers (TSPs) and Facilitation Service Providers (FSPs) within the WSDPôs Introductory, Full Training and Refresher Courses.

Environmental Management Officers at village and community level i.e. Village/Urban sub-Ward ("Mtaa")

At this level, those involved in the planning and implementation of projects will be trained in how to screen projects, implement and monitor their EMPôs, as well as managing the EIA process as outlined in this ESMF.

7. CONCLUSIONS AND RECOMMENDATIONS

This Environmental and Social Management Framework has been prepared in order to guide project implementers and other stakeholders to identify and mitigate environmental and social impacts of the WSDP. This framework will apply to any project activity within the WSDP.

In implementing this ESMF, there will be different sources of social and environmental impacts, arising from existing and new project activities, apart from WSDP project activities. Some of these project activities may be implemented outside the area of influence of the WSDP.

It is also to be appreciated that the project sites proposed for the WSDP are dynamic and prone to environmental and social impacts that may be generated from activities of other future development projects. These impacts may affect the project locations for the WSDP. In accordance with the National Environmental Management Act other existing and new project activities outside the WSDP will have their own environmental and social management frameworks and plans which could be used together in this ESMF.

Successful implementation of this ESMF will depend to a large extent on the involvement and participation of local communities.

Specifically it is recommended that:

- Environmental and Social awareness and education for the key stakeholders and affected communities must be an integral part of the ESMF implementation.
- District and local community structures should be adequately trained to implement the screening process, and where required to develop and to implement appropriate Environmental and Social Management and Monitoring Plans.
- This ESMF should be regularly updated to respond to changing local conditions. It should go through the national approval process, reviewed and approved. It should also incorporate lessons learned from implementing various components of the project activities.
- The District Councils should be assisted to develop appropriate information management systems to support the environmental and social management process.
- The Environmental Management Officer should adequately administer the ESMF and should be given the necessary support and resources to ensure effective implementation.

This ESMF will provide WSDP implementers with the screening, planning and EIA processes that will enable them to identify, assess and mitigate potential negative environmental and social impacts and to ensure that proper mitigation measures are taken.

ANNEX F: Resettlement Policy Framework

Resettlement Policy Framework

PRINCIPLES GOVERNING RESETTLEMENT AND COMPENSATION

The impacts due to involuntary resettlement from development programmes, may give rise to economic, social and environmental risks resulting in production systems being dismantled. The Land Act No. 4 and Village Land Act No.5 of 1999 have set clear procedures for full, fair and prompt compensation while acquiring land form citizens. These procedures will be adhered to, especially the Land (assessment of the value of compensation) Regulations made under section 179 of Land Act no.4 of 199.

Therefore, the principles of this Resettlement Policy Framework are:

1.) Involuntary resettlement and land acquisition will be avoided where feasible, or minimised, by exploring all viable alternatives.
2.) Where involuntary resettlement and land acquisition is unavoidable, resettlement and compensation activities will be conceived and executed, sufficient investment resources to give the displaced persons opportunity to share the programme benefits.
3.) Displaced and compensated persons will be assisted to improve their livelihood or to restore them to pre-displacement levels, whichever is higher.

The affected people refer to people who are directly affected socially and economically by investment projects caused by:

(a) The involuntary taking of land and other assets resulting in:
    i) relocation or loss of shelter;
    ii) loss of assets or access to assets; and
    iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location.

or

(b) The involuntary restrictions or access to legally designated parks and protected areas results in adverse impacts on the livelihood of the displaced persons.

The resettlement policy applies to all components under the Programme and it applies to all displaced persons regardless of the total number affected, the severity of the impact and whether or not they have legal title to the land. The policy requires that the implementation of individual resettlement and compensation plans are a prerequisite for the implementation of Programme activities causing resettlement, such

as land acquisition, to ensure that displacement or restriction to access does not occur before necessary measures for resettlement and compensation are in place. The policy encourages potential contractors and Programme Planning Teams through the provision of incentives in their contracts to show preference for employing Programme-affected persons (PAPôs).

The RPF seeks to ensure that affected communities are meaningfully consulted, have participated in the planning process and, are adequately compensated to the extent that their pre-displacement incomes have been restored and that the process is a fair and transparent one.

PROCESS FOR RESETTLEMENT AND COMPENSATIONS PLANS

Implementation of WSDP will involve productive investments that may require the involuntary taking of land and other assets. Since the locations of these areas were not known at the time of the preparation of the Programme, the GoT has prepared this RPF. During implementation of the Programme, preparation of individual Resettlement and Compensation Plans will be prepared consistent with this RPF.

To address the impacts under this policy, resettlement and compensation plans must include measures to ensure that displaced persons are:

a.) informed about their options and rights pertaining to resettlement and compensation;

b.) consulted on, offered choice among, and provided with technically and economically feasible resettlement and compensation alternatives; and

c.) provided prompt and effective compensation at full replacement cost for losses of assets and access, attributable to the Programme.

The first stage in the process of preparing the individual resettlement and compensation plans is the screening process to identify the land/areas that are causing resettlement. The resettlement and compensation plans will contain the analysis of alternative sites undertaken during the screening process. The screening process will be done by relevant local government planning bodies at the closest level to the affected communities.

The Screening Process

This process would lead in identification of WSDP projects, which may potentially involve resettlement issues. The Environmental Management Officers (EMOs) and DWSTs/WSSAs/UWSAs will be responsible for the screening of projects based on the environmental and social checklist.

The list of projects that have potential resettlement issues will then be subjected to a comprehensive sensitisation and consultation process with the potentially impacted communities and the outcome of this process would be documented for each site. The list and the outcome of the consultative process for each site/project on the list would then be sent to the respective local government council in the jurisdiction mandated to confirm, approve, disapprove, refer for further consultation and/or take a final decision on each proposed site/ project. Carrying out the screening process in this way is designed to give it the integrity and transparency it needs to allow all stakeholders to have confidence in the process.

Preparation of Baseline Information and Resettlement and Compensation Plan (RAP)

Once projects have been through this screening and consultative process, each chosen location will be the subject of a study and the preparation of a document as follows:

- a socio-economic study to include determination of impacts; and
- individual resettlement and compensation plans for each project.

The requirements of the RAP are:

- baseline census and socio-economic survey information;
- specific compensation rates and standards;
- policy entitlement related to any additional impacts identified through the census of survey;
- a description of the resettlement sites and programme for improvement or restoration of livelihoods and standards of living;
- implementation schedule for resettlement and compensation activities;
- detailed costs estimates; and
- consultation with affected people.

The process of identifying sites, consulting people and carrying out socio-economic studies will be interactive. Capacity will be built at LGAôs level, EMOs, EMCs and DWSTs/WSDPs and communities through training and technical assistance to ensure that all stakeholders involved discharge their different responsibilities effectively.

LAND ACQUISITION AND LIKELY CATEGORIES OF IMPACT

Generally, land acquisition, compensation and resettlement of people may be necessary for some of the projects. The severity of impact, determines what the resettlement measures will be. For example, for a treatment plant, the impact would be that a whole piece of land is required whereas for a water supply project requiring a pipe network only a small portion of the land may be impacted.

ELIGIBILITY CRITERIA FOR DEFINING VARIOUS CATEGORIES OF PROGRAMME AFFECTED PERSONS

The likely displaced persons can be categorised into four groups, namely:

1.) **Affected Individual** ï An individual who suffers loss of assets or investments, land and property and/or access to natural and/or economic resources as a result of the programme activities and to whom compensation is due.
2.) **Affected Household** ï A household is affected if one of its members is affected by programme activities, either by loss of property, land, loss of access, or otherwise.
3.) **Affected local community** ï A community is affected if Programme activities affect their socio-economic and/or social-cultural relationships or cohesion.
4.) **Vulnerable Households** ï Vulnerable households may have different land needs from most households or needs unrelated to the amount of land available to them.

The three suggested criterions for eligibility will include the following:

1.) Those who have formal rights to land (including customary and statutory rights of occupancy recognised under the Laws of Tanzania).
2.) Those who do not have formal legal rights to land at the time the projectôs socio-economic study census begins but have a claim to such land or assets provided that such claims are recognised under the Laws of Tanzania or become recognised through a process identified in the resettlement and compensation plan.
3.) Those who have no claim to land they are occupying or using.

Those covered under a) and b) above are to be provided compensation for land they lose, and other assistance in accordance with the policy. Persons covered under c) above are to be provided with resettlement assistance in lieu of compensation for the land they occupy or use, and other assistance.

Eligibility for Community Compensation

Local communities (villages, ward, districts, towns, etc) permanently losing land and/or access to assets under customary rights will be eligible for compensation.

LEGAL FRAMEWORK

The local government system in Tanzania is based in the decentralisation policy and is enshrined in the 1977 Constitution, which was amended through Act No. 15 of 1984 with the effect of making the existence of local government authorities constitutionally sanctioned. The decentralisation policy is enacted through the Regional Administration Act (1997), which effectively initiated the decentralisation process by scaling down the roles, functions and staffing at the regional level.

Local Government Acts

The Local Government Acts being the Local Government (District Authorities) Act No.7 of 1982 and Local Government (Urban Authorities) Act No.8 of 1982 provide for the system of local governments. Administratively, Tanzania is divided into three levels of local governments whereby each level has statutory functions with respect to development planning.

Land Tenure and Ownership

Land tenure and ownership in Tanzania is governed by statutes such as the 1977 Constitution, National Land Act No. 4 of 1999, Village Land Act No. 5 of 1999, Land Acquisition Act 1967, and Land Ordinance, 1923 Cap. 113. Land in Tanzania is owned by the state. For the purpose of management of land under the land Act No. 4 of 1999 and all other laws applicable to land, public land in Tanzania.

Socio-economic activities are permitted on land in the first two categories of general/public land and not permitted or restricted in land reserved for national parks, protected areas and wildlife/forest reserves.

In respect of public land, Tanzania has a dual system of land tenure. The system recognises both customary and statutory rights of occupancy. Tenure rights to land can be held by individuals and communities. Holdings of individuals can be (i) by leasehold right of occupancy for varying periods e.g. 33, 66 or 99 years; (ii) by customary rights of occupancy that have no term limit.

Compensation

It is a constitutional right in Tanzania that if oneôs property is either acquired or nationalised, the individual so affected must be compensated. The word compensation connotes, paying off the loss suffered or to be suffered by an individual on his property (land) being acquired, such that the affected is put in a position as though he/she had not suffered or lost his property. Thus he/she will be compensated for the physical crust (soil) and developments thereon or underneath.

The compensation value should be the price at which the said improvements would fetch if sold in the open market. The compensation shall include:

- market value of the real property;
- disturbance allowance;
- transport allowance;
- loss of profits or accommodation;
- cost of acquiring or getting the subject land; and
- any other immediate costs or capital expenditure incurred to the development of the subject land.

METHODS OF VALUING AFFECTED ASSETS

The valuation of affected assets will be carried out by estimation of the market value, when it is known, and/or by estimation of the replacement cost. Graves are valued separately ï under the Graveyard Removal Act of 1968.

Valuation methods for affected land and assets would depend on the type of asset. The land asset types identified under Tanzania law in this policy framework are:

i) State land not within the jurisdiction of a village; and
ii) Village land, including customary rights of villagers.

Under this RPF, not only assets and investments will be compensated for, but also land. Thus, a customary landowner or land user on state-owned land will be compensated for land, assets, investments, loss of access etc, at market rates at the time of the loss.

Compensation Payments

Individual and household compensation will be made in cash, in-kind, and/or through assistance. The types of compensation will be an individual choice although every effort will be made to instil the preference of accepting in-kind compensation if the loss amounts to more that 20 percent of the total loss of subsistence assets.

Table 5.1: Forms of Compensation

Cash Payments	Compensation will be calculated and paid in Tanzanian shillings. Rates will be adjusted for inflation.
In-kind Compensation	Compensation may include items such as land, houses other buildings, building materials, seedlings, agricultural inputs and financial credits for equipment.
Assistance	Assistance may include moving allowance, transportation and labour.

Compensation

Compensation for Land

Compensation is intended to provide a farmer whose land is acquired and used for project purposes with compensation for the land, labour and crop loss. For this reason, and for transparency, ñlandò is defined as an area:

- in cultivation;
- being prepared for cultivation; or
- cultivated during the last agricultural season.

This definition recognises that the biggest investment a farmer makes in producing a crop is his or her labour. A farmer works on his/her land most of the months of the year. The compensation will take on board input for producing a crop including labour put into the land each year by the farmer.

Compensation for Crops

The prices for cash crops will be determined as the average value of the cash crop during the previous year, corrected for inflation. The prices for subsistence crops will be determined as the highest value over the previous year, corrected for inflation.

Compensation for Buildings and Structures

Compensation will be paid by replacing structures such as huts, houses, farm outbuildings, latrines and fences. Any homes lost will be rebuilt on acquired replacement land; however cash compensation would be available as a preferred option for structures lost that are not the main house or house in which someone is living. The current market prices for construction materials will be used. Alternatively, in-kind compensation will be paid for the replacement cost without depreciation of the structure.

Compensations for Sacred Sites

Sacred sites include but are not restricted to altars, initiation centres, ritual sites, tombs, and cemeteries that are accepted by practice, tradition and culture as sacred. To avoid any possible conflicts between individual and/or communities, the use of sacred sites for any programme activity is not permitted.

Compensation for Vegetable Gardens and Beehives

Compensation for loss of vegetable gardens will be calculated based on the average amount that an average town dweller spends on buying vegetables over one year per adult in the local market. Beekeepers will be compensated by the value of one seasonôs production costs of honey for each hive that is moved and any reasonable costs associated with moving the hive.

Compensation for Horticultural, Floricultural and Fruit Trees

Large fruit trees (e.g. mangoes and coconut) are important as sources of:

- subsidence food for families;
- petty market income in some areas; and
- shade

Mango and coconut trees used for commercial purposes will be compensated at market value based on historical production records. If households chose to resettle, they will be compensated for the labour invested in the trees they leave behind. The Ministry of Lands and Human Settlements Development has developed crop compensation rates. These rates are to be reviewed every year. Compensation assessment must be approved by Chief Government Valuer.

Compensation for other Domestic Cash Crops and Fruit Trees

These trees have recognised local market values, depending on their species and age. Individual compensation for wild tree ñownedò by individuals, who are located in lands as defined in this policy, will be paid. Note that wild, productive trees belong to the community when they occur in the true bush as opposed to a fallow land. These trees will be compensated for under the umbrella of the village or community compensation. Examples include: avocado, bananas, lemon, guava, lime oranges, grapefruits, papaya, tamarind, etc.

ORGANISATIONAL PROCEDURE FOR THE DELIVERY OF ENTITLEMENTS

LGAs are to cover necessary land purchase and resettlement costs from own source revenue. Funding will be processed by the PMO-RALG through the local governments. Procedures will comply with the financial arrangements agreed upon at project appraisal.

The compensation process will involve steps and will be in accordance with the individual programme resettlement and compensation plans:

Public Participation with the local communities will initiate the compensation process as part of an ongoing process that will have started at the land selection/screening stage and at the time the socio-economic assessment is carried out.

Notification of land resource holders ï the respective local/district heads involved in identifying the land will notify the WDC, Village Council and village inhabitants who will help to identify and locate the property users.
Documentation of Holdings and Assets ï Village, Ward and District Officials will arrange meetings with affected individuals and/or households to discuss the compensation process.

Agreement on Compensation and Preparation of Contracts ï All types of compensation are clearly explained to the individual or household.

Compensation Payments ï All handing over of property such as land and buildings and compensation payments will be made in the presence of the affected party and the village officials.

Community Compensation Payments

Compensation for a community as a whole will be in-kind only and take the form of reconstruction of the facility to at least the same or better standard to that being built by the WSDP on the area to serve the same function. No community project will be approved that requires the displacement of additional persons for compensation or relocation.

IMPLEMENTATION PROCESS

Before any project activity is implemented, people who are affected and have been determined to be entitled to compensation will need to be compensated in accordance with this policy. For projects involving land acquisition, it is further required that these measures include provision of compensation and of other assistance required for relocation, prior to displacement, and preparation and provision of resettlement sites with adequate facilities, where required. In particular, the taking of land and related assets may take place only after compensation has been paid and, where applicable, resettlement sites and moving allowances have been provided to displaced persons. For project activity requiring relocation or loss of shelter, the policy further requires that measures to assist the displaced persons be implemented in accordance with the projectôs resettlement plan of action.

The measures to ensure compliance with this policy directive will be included in the resettlement and compensation plans that will be prepared for each land involving resettlement or compensation. The timing mechanism of these measures will ensure that no individual or affected household will be displaced due to civil works before compensation is paid and resettlement sites with adequate facilities are prepared and provided for to the individual or household affected.

GRIEVANCE REDRESS MECHANISMS

At the time that the individual resettlement and compensation plans are approved and individual compensation contracts are signed, affected individuals will have been informed of the process for expressing dissatisfaction and seeking redress.

The grievance process will be simple, administered as far as possible at the local level to facilitate access, flexible and recognising that most people are illiterate and poor requiring a speedy, just and fair resolution of their grievances. All attempts will be made to settle grievances. Those seeking redress and wishing to state grievances will so by notifying their Village Council and the District Commissioner (DC)/District Executive Director (DED). The DC/DED will consult with the respective local governments, Ward/Village/Mtaa and other records to determine claims validity.

If the complainantôs claim is rejected, then the matter will be brought before the Land Tribunals and/or the local courts for settlement. If the matter cannot be settled by the local court and/or the District Land Tribunals, the matter will go the High Court for resolution. The High Court of Tanzania will be the highest appellate ñjudgeò in this system. The decision of the High Court is final. All effort will be made to ensure decisions are reached within a full growing season after the complaint is lodged.

FUNDING RESETTLEMENT AND COMPENSATION

The estimate of the overall cost of resettlement and compensation will be determined during the socio-economic study. The local government will have to finance the resettlement and compensation plan depending on who is impacting livelihoods.

When these locations are known, and after the conclusions of the site specific socio-economic study, information on specific impacts, individual and household incomes and numbers of affected people and other demographic data will be available. A detailed and accurate budget for resettlement and compensation will be prepared.

MECHANISMS FOR CONSULTATIONS

Public consultation and participation are essential because they afford potential displaced persons the opportunity to contribute to both the design and implementation of project activities. Particular attention will be paid to public consultation with potentially affected individuals/households when resettlement and compensation concerns are involved.

Public consultation will take place at the inception of the planning stages when the development plans are being prepared. The participation strategy will evolve around the provision of full opportunity for involvement. Monitoring of this process will be through the District Environmental Management Officer[45] (DEnv.O) as part of the individual resettlement and compensation plans and overall monitoring and evaluation mechanism of the entire programme.

MONITORING ARRANGEMENTS

The arrangements for monitoring will fit into the overall monitoring plan of the entire WSDP Programme, which will be through the local governments themselves.
Consistent with the Environmental and Social Management Framework, the District Environmental/Planning officers will be responsible for periodic transfer of information to MoW.

A watch will be kept over process indicators and regularly reported through local government to the MoW. These will include:

- Number of grievances and time and quality of resolution.
- Relations between the project and the local communities.
- Percentages of individuals selecting cash or a combination of cash and in-kind compensation.
- Outstanding village compensation contracts.
- Outstanding individual compensation or resettlement contracts.
- Seasonal or inter- annual fluctuation of key foodstuffs.
- Number of impacted locals employed by the civil works contractors.
- Training of affectees.
- Use of payments.
- Number of contentious cases out of the total.

[45] The Position of District Environmental Management Officer will need be filled in by all LGA as directed by the National Environmental Act.

ANNEX G: WSDP Guidelines and Operational Manuals

WSDP Guidelines and Operational Manuals

S/N	GUIDELINE TITLE
	WRM
1	Operational Guidelines for Basin management
2	WRM Programme Operational Manual
	RWSSP
3	Guidelines for Planning and Operating District Water and Sanitation Grants
4	Formula Based Allocation of Financial Resources to LGAs
5	Programme Operational Manual (POM)
6	District Operational Manual (DOM)
7	Modular Guide for District Water and Sanitation Team Training
8	Facilitators Manual
9	TrainersôGuide for Facilitators Training
10	Community Water Supply Management Manual (a Handbook for WATSAN Committee)
11	Guide for the Training of WATSAN Committee and Water User Groups
12	Guidelines for Facilitating Communities in Establishing Legal Water User Entities
13	Management Models for Community Water User Entities
14	Field Monitoring and Coaching Guide
15	Community Facilities and Management Plan (FMP)
16	Water Supply and Waste Disposal Design Manual (1997)
17	Capacity Building and Training Requirements
	UWSSP
18	Revised Operational Guidelines
19	Legislation and Operational Guidelines

ANNEX H: Key Reference Documents

Key Reference Documents

1. Cowater International Inc. 2005. ñSocial Impact Analysis of the NRWSSP - Annex D of the NRWSSP Main Reportò. Rural Water Supply and Sanitation Project. Ottawa, Canada.
2. Cowater International Inc. 2005. ñRWSSP MIS Implementation Plan and Budgetò. Rural Water Supply and Sanitation Project. Ottawa, Canada.
3. Cowater International Inc. 2004. ñThematic Paper ï Management Information System (MIS)ò. Rural Water Supply and Sanitation Project. Ottawa, Canada.
4. Cowater International Inc., Serviceplan Ltd., and Water and Environmental Development Company (WEDECO) Ltd. 2004. ñTechnical, Social and MIS Audit of the RWSSPò. Rural Water Supply and Sanitation Project. Ottawa, Canada.
5. Cowater International Inc., Serviceplan Ltd., and Water and Environmental Development Company (WEDECO) Ltd. 2004. ñMid-Term Technical Assessment of the RWSSPò. Rural Water Supply and Sanitation Project. Ottawa, Canada.
6. Government of Tanzania, 2002. National Water Policy.
7. Government of Tanzania, 2006. National Water Sector Development Strategy.
8. Government of Tanzania. Vice Presidentôs Office. 2005. ñNational Strategy for Growth and Reduction of Poverty (NSGRP)ò. Dar es Salaam, Tanzania.
9. Government of Tanzania. Presidentôs Office, Civil Service Division. 2000. ñPublic Service Reform Programme 2000-2011ò. Dar es Salaam, Tanzania.
10. Government of Tanzania. 1999. ñDevelopment Vision 2025 for Tanzaniaò. Dar es Salaam, Tanzania.
11. MacDonald, M. 2005. ñNational Urban Water Supply and Sewerage Strategic Programme ï Strategy Reportò. Volume 1 ï Main Report.
12. Ministry of Agriculture and Food Security, Tanzania. 2005. ñAgricultural Sector Development Programme (ASDP) ï Support Through Basket Fundò. Dar es Salaam, Tanzania.
13. Ministry of Water, Tanzania. 2006. ñNational Rural Water Supply and Sanitation Programme (NRWSSP)ò Main Report. Dar es Salaam, Tanzania.
14. Ministry of Water, Tanzania. 2003, 2004, 2005. Public Expenditure Reviews.
15. Ministry of Water, Tanzania. 2006. ñWater Resources Management Programme (WRMP)ò. Water Resources Management Development and Investment Programme. Dar es Salaam, Tanzania.
16. Ministry of Water and Livestock Development, Tanzania with WaterAid, Eastern Africa Statistical Training Centre and National Bureau of Statistics. 2002. ñWater and Sanitation in Tanzania ï Poverty Monitoring for the Sector Using National Surveysò. Dar es Salaam, Tanzania.

17. PORALG. 1998. ñPolicy Paper on Local Government Reformò.

18. The Economist. 2006. ñWorld in Figuresò. London, U.K.

19. World Bank. 2006. ñProject Appraisal Document on a Proposed Loan/Credit to the Government of the United Republic of Tanzania for a Water Sector Development Programmeò. Washington, D.C.

20. World Bank. 2005. ñTanzania Water Resources Assistance Strategy ï Improving Water Security for Sustaining Livelihoods and Growthò. Washington, D.C.

World Bank. 2000. ñMemorandum of the President of the International Development Association and the International Finance Corporation to the Executive Directors on a Country Assistance Strategy of the World Bank Group for the United Republic of Tanzaniaò. Washington, D.C.